a W. R. C. Smith Publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

SEPTEMBER, 1956

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A special section devoted to the Perkin Centennial, the AATCC Convention, and technical articles on various phases of wet processing

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Textile Engineering
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Modern machinery and production layouts, prepared and executed by Robert and Company Associates, have enabled scores of our clients to step-up production, cut costs and improve quality.

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Mill men! — See this new motor — and the *complete* line of Diehl Textile Motors at Section No. 834.
SOUTHERN TEXTILE EXPOSITION
Greenville, S. C.
October 1st to 5th, 1956

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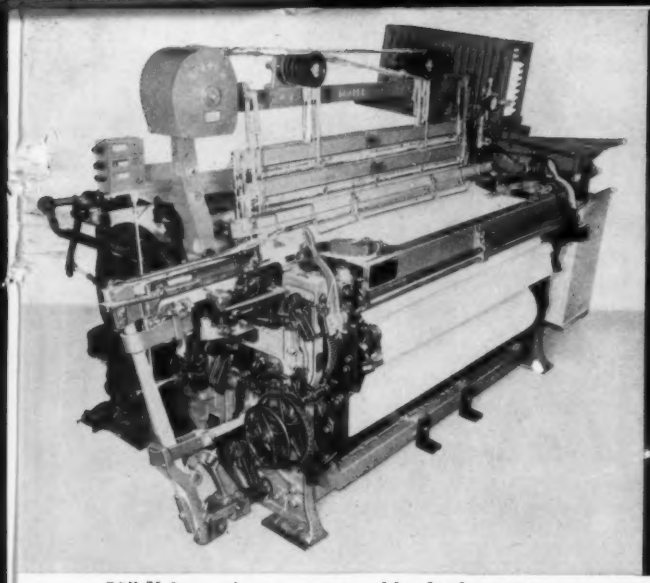
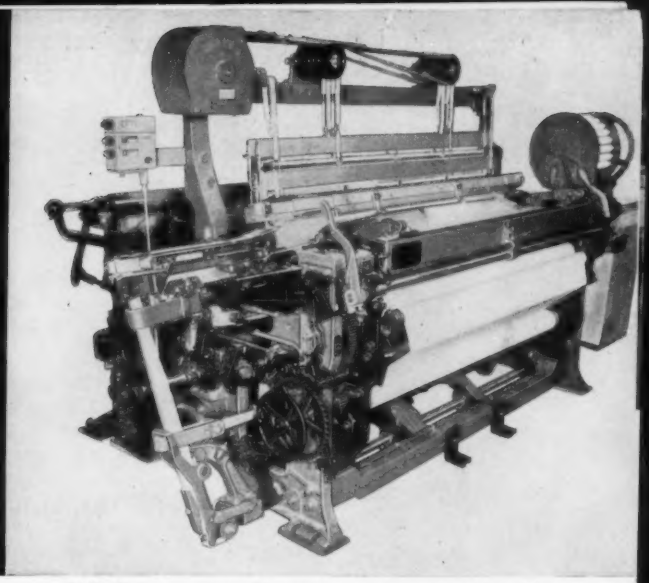
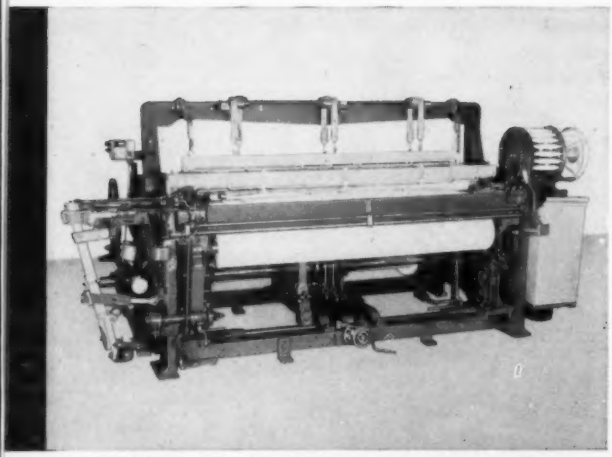


50″ X-2 weaving spun rayon blends, featuring new Filling Magazine.



50″ X-2 weaving filament yarns equipped with conventional Rotary Battery and new double-roll Take-Up.

DRAPER TO EXHIBIT NEW RESEARCH AND ENGINEERING DEVELOPMENTS AT GREENVILLE

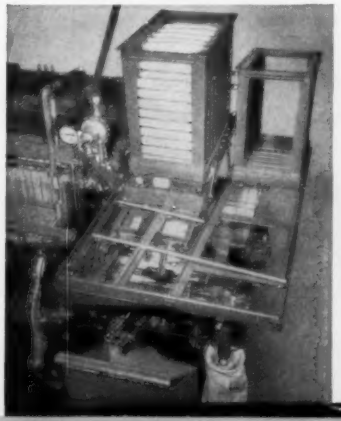


82″ XP-2 wide sheeting loom incorporating all of the latest improvements.

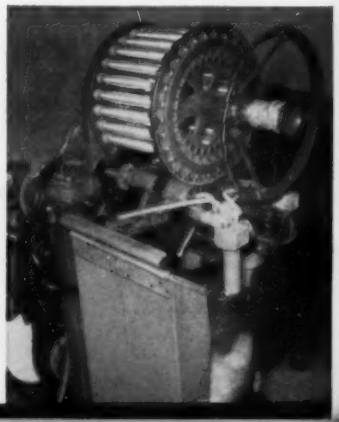
Draper Corporation will exhibit three looms at the Southern Textile Exposition. Many of the constructions on these looms are being shown for the first time. All are designed to increase production and efficiency, provide greater loom versatility and reduce labor and maintenance costs.

The exhibit will feature a new Automatic Filling Magazine (which eliminates the conventional type battery); a Pneumatic Thread Clearing device; a new Take-Up mechanism; new and improved Parallel Motions; and other assemblies which contribute to better loom performance. For the latest in weaving aids, see the Draper exhibit at the Southern Textile Exposition; booths #134-#135-#136.

Automatic Filling Magazine ... currently on mill trial.



Pneumatic Thread Clearer ... currently on mill trial.



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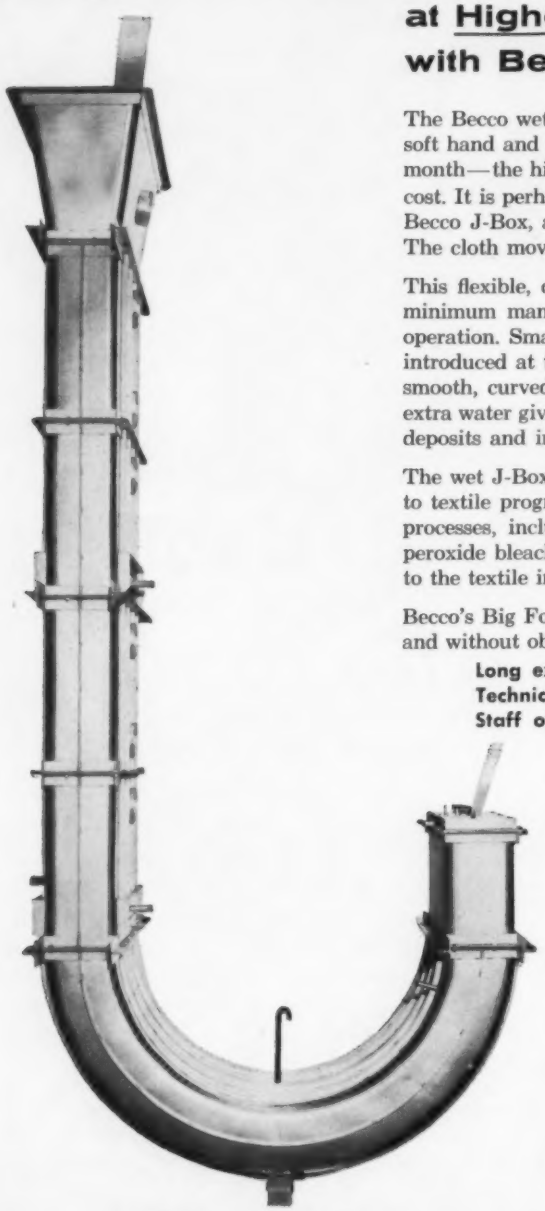

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NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 120, No. 9
September, 1956

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...for *fast* delivery of tubes
they're tops!"

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Shorts and Remnants

by J. C. C.

► Yes sir! There they go, millions of them, tripping, skipping, shuffling, running, ambling, dancing, pushing, shoving—off to school again. Septem-

ber it is. Grumbling, scowling, protesting, laughing, smiling, smirking, yelling, shouting, snickering, leering, but they still love it. Most of them are glad to go back again—to be bossed by some one else for a change.

And what is Mom doing right now? She's saying: "Dad, you can't expect Susan to wear those old things any longer. I've got to take her down and get a couple more dresses and some other things." . . . And "Junior, don't argue—those jeans are disreputable and worn, but you are going to have a decent pair of pants if I have to tie you to get them on, and some new shirts too." So there they go after millions of dresses, shirts, suits, pants, coats, bobby sox, pairs of hosiery, yards of cloth, etc. And more of them every year.

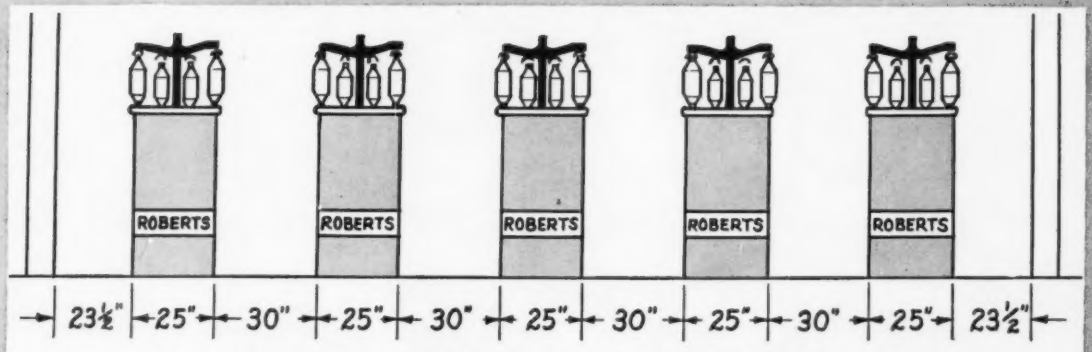
Another shot in the arm for textiles. So hurrah for school and hurrah for kids! May their tribe increase (and it does). We may even go along with that speaker at a textile meeting last spring who prophesied a 46% increase in fiber consumption by 1965.

► We have had complaints on this here column. Old S&R's ball and chain, war department, secretary of the treasury, love-honor and something-or-other, cook, housekeeper, ever-loving wife says this column smells. She didn't say "stinks" or did she? Anyway, she says it isn't funny—no jokes. We will show her who is boss. Anyway, we don't know any printable jokes.

There are a couple about traveling salesmen and one about "who was that woman I saw you with last night?" And another one about the

NEW! ROBERTS 25 SPINNING FRAME

- **25 inches wide**
- **25% more yarn from same floor space**
- **25% less building for same production**
- **25% saving in building and utility cost**



5 frames in a typical 25 foot bay—25 inch frames, 30 inch aisles

TRIED AND PROVEN. The Roberts 25 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. It embodies all the tried and proven features most wanted in a modern spinning frame giving highest production and lowest maintenance.

ROBERTS DRAFTING. Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics or blends.

SMALL, MEDIUM OR LARGE PACKAGES. The Roberts 25 Spinning Frame is available in gauges from 3 inches to 4½ inches and can be arranged for direct filling on 8 or 8¾ inch quills or for warp up to a 3 inch ring and 12 inch bobbin.

ALL BALL BEARING HEAD. The all ball bearing head design is outstanding in its simplicity and flexibility. Thirty greased-for-life ball bearings of one size are used and all plain bearings and studs eliminated. All gears in the head are hardened and have one pitch, one width, one bore and one size key, making them completely interchangeable. Two wrench sizes fit all shafts and tightening points. Draft Constant can be varied simply from 400 to 3200 and Lay adjusted for coarse or fine numbers by a simple gear change.

STANDARD FEATURES

Included as standard equipment are Roberts Ball Bearing Spindles, Roberts built-in Suction Cleaning, Roberts AeroCreels and 8 inch Cylinder Drives.

COMPARE ALL 3

For high production, top yarn quality, large packages, low maintenance expense, dependability—and, at the lowest investment per spindle—Roberts Spinning is second to none in America today.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

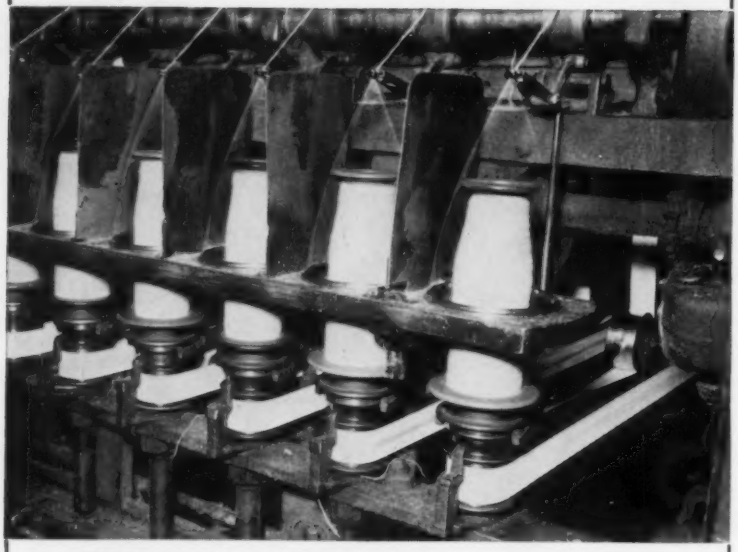
Booth

Originators of **STRIP-O-MATIC CARD CLOTHING**

FIRST . . . . . **STRIP-O-MATIC**

SECOND . . . . . **SUPR-O-TAPE**

Now... **SUPR-O-BAND**



SUPR-O-BAND, the new banding for spindle drives on spinning, twisting, and roving frames. Promises to be as successful as SUPR-O-TAPE that revolutionized woolen condensing "over night."

ALREADY PROVED by more than a year of rugged mill tests. Note these plus features:

- IMPROVED QUALITY
- LOWER POWER CONSUMPTION
- INCREASED PRODUCTION
- MORE ECONOMICAL

BECAUSE . . . SUPR-O-BANDS Give:

- OPTIMUM SPINDLE SPEED
- LONG LIFE
- UNIFORM TWIST
- MAXIMUM FRICTION—NO SLIPPAGE
- LOWEST COST

SUPR-O-BANDS are lint-free; use belt-hooks or stitching.

- STRIP-O-MATIC CARD CLOTHING
- CONVENTIONAL CARD CLOTHING
- SUPR-O-TAPE FOR CONDENSERS

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Shorts and Remnants

moose who walked into the bar and ordered a shot of bourbon for which he was charged $1.50. The bar tender's eyes were popping out and he said "We don't see many moose in this here bar," to which the moose replied, "No wonder at $1.50 a shot for bourbon."

Then of course there are those signs in the lunch room like "We don't know where Mom is, but we have Pop on ice" or "We have made a deal with the bank. They don't serve sandwiches, and we don't cash checks."

Or there is the Texan who fumbled for change at the toll bridge and said "I have no change, but how much for the bridge?" or the Texas flea who bought himself a dog.

And then, there's one about a teacher who asked little Johnny if she laid two eggs on the desk and three eggs on the chair how many eggs would there be, and he said he didn't know but he'd like to see her do it.

Now you see how things go, and if you don't watch out next month it'll go from bad to verse. Help! Help! Help! Has anyone got a Joe Miller joke book?

► A year or so ago we yelled at Texas Instruments, Dallas, Tex., for taking our slogan "Keep your eye on TI." In the July issue we printed the picture of the TI plant seen in a grocery store—a fast grower. Now an English reader sends us a clipping for TI Aluminum. So everybody wants in the act, and we don't blame them.

A salesman writes us of a recent textile convention " . . . I heard more compliments on your editorial coverage and the paper in general . . . This came from both mill men and suppliers. . . . " Bless your heart.

► This probably should be in an ad, but we're short on pictures this month. If you want to buy a dozen laboratory pads cheap, here's your chance. Wm. Jenkins Adv., Inc., Philadelphia, sends in the picture below for H. W. Butterworth & Sons

Co., Bethayres, Pa., with the caption "Cheaper by the dozen."

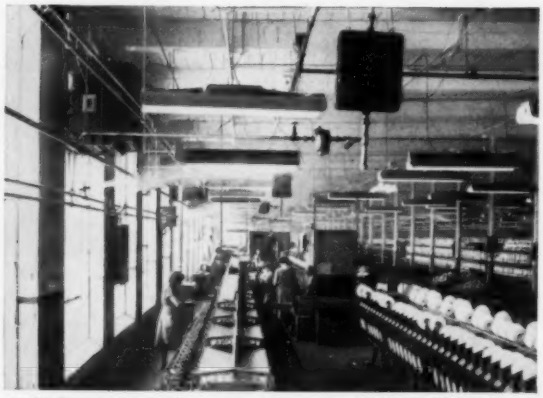
(Continued on page 8)

AMCO Humidification System installed at Caron Spinning Company, Robesonia, Pa. The highly sensitive AMCO Cyclestat Control holds humidity within narrow limits.

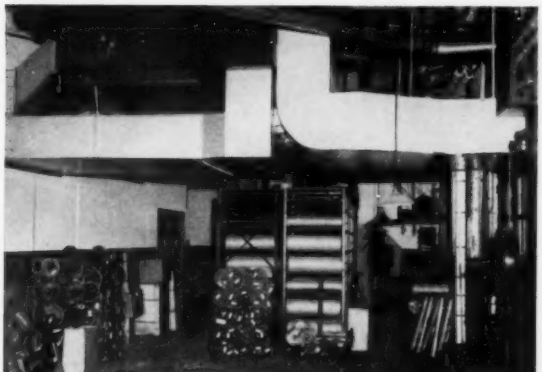
There's an AMCO AIR CONDITIONING SYSTEM designed for YOU!

When you think of air conditioning, remember that AMCO offers systems and equipment for every manufacturing requirement and every climatic condition. There are four different types of AMCO systems, alone or in combination: humidification, evaporative cooling, unit dry-duct, or central station air conditioning. And because AMCO engineers have these four basic systems — plus all associated equipment and controls — they are able to offer you unbiased advice on the *best* system for your particular need.

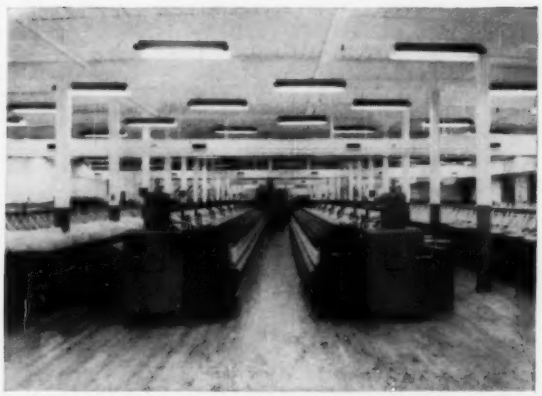
If you want the facts about textile mill air conditioning, with the advantages and limitations of each system detailed, as well as answers to such questions as cost, adaptability, capacity, maintenance and operating expense, write for AMCO's booklet, "AIR CONDITIONING for the TEXTILE INDUSTRY". Or better still, ask AMCO to recommend, without obligation, the system best suited to your mill.



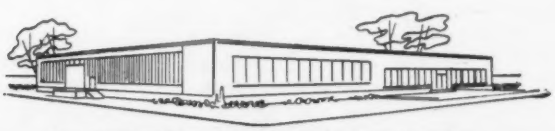
AMCO Evaporative Cooling System in Texas Textile Mills, McKinney, Texas. Note window units which control mixture of fresh and recirculated air.



AMCO Unit Dry-Duct System at The Windsor Manufacturing Company, Philadelphia, Pa. The entire unit is installed overhead out of the way.



AMCO Central Station Air Conditioning in the Roving Dept., Highland Park Mills, Charlotte, N. C. This is AMCO's highly efficient split-system.



New Cleveland-Rowan Plant of the American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work-and sheet metal products.

AMCO

AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, CLEVELAND, NORTH CAROLINA • ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • PROVIDENCE, R. I.

SOUTHERN STATES' NEW COILER HEAD AND BASE MAKE CONVERSION TO LARGER CANS SELF-PAYING

For mills seeking a low initial cost for conversion to larger cans, Southern States' new conversion unit is the answer. It consists of: 1) the identical, vastly improved ball bearing head used on the new complete coiler; 2) an adapter spacer and upright shaft for increased coiler height necessary to accommodate 36" or 42" cans; and 3) a new, standard-type base assembly with a conventional gear system for driving the can table. All necessary components are furnished in kit form for quick installation, *using your existing stands.*

Southern States' Conversion Units are designed for use on any make cotton card and for accommodating cans of larger diameter.

Case histories of mills prove conclusively that Southern States' conversions are so economical they soon pay for themselves. For a small initial investment, you enjoy all the advantages of more efficient handling; lower operating costs; improved quality; simplified oiling; ease of maintenance; smaller parts inventory; and years of satisfactory service.

Get full facts from your Southern States representative or write direct to us for Technical Bulletin No. 203-a.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

(Continued from page 6)

► For the record, 32 textile concerns were among the top 500 U.S.A. corporations in 1955, according to "Fortune." This was a gain of 1 over 1954, and these 32 companies showed a gain of $1,000,000 in sales and an increase from 3 to 4.3% in profits on sales. We told you 1955 was a good one. Burlington and United Merchants were at the top, ranking 70th and 96th respectively among all U.S.A. corporations.

► Time *mauves* on, and here it is welcome to New York and the Perkin Centennial. Our dyer, chemist, and finishing plant friends will find a lot of interest during the whole week of Sept. 10-15 in New York, ending up with the AATCC meetings Thursday through Saturday of that week and featured in our special "Wet Processing Section" in this here issue. Check the special dyes, chemicals, and finishing machinery advertised herein, too. They are all good folks with the TI Seal of Approval. So saying, we'll *mauve* on.

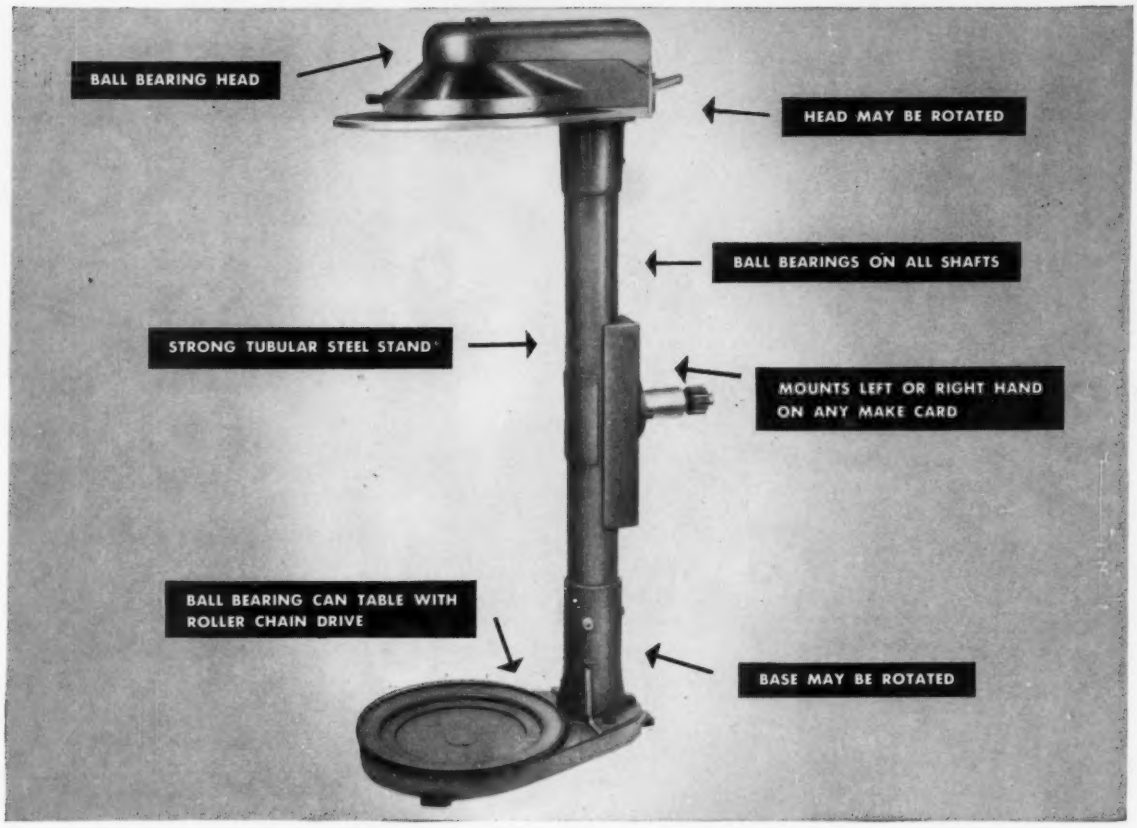
Flash! Stop the presses! A folder just received from Francolor, Inc., U.S.A. Div. C.F.M.C., says Verguin, a Frenchman, discovered in 1858, fuchsine, which contrary to mauve of Perkin, is still in use today and therefore is the oldest synthetic.

Do you reckon we can call off the Perkin Centennial and cancel our order for mauve ink? Eureka! We have a solution. Go ahead with the Perkin celebration and have a Verguin Centennial in 1958. We'll print a special section in fuchsine if somebody will tell us what color that is.

► To Oak Ridge Properties, Inc., Knoxville, Tenn., we don't know what percentage of a year's business is usually done in each calendar month by cloth shops. We don't even know what a "cloth shop" is.

To Hans Heinrich Petersen, Hamburg, Germany, we are sending an extra copy of July '55 which contained the requested article on "Strecksocken aus Baumwolle-Nylon-Krauselgarm." If you don't believe it, look on pages 124-127 if you still have the issue.

To Skenandoa Rayon Corp., Utica, N. Y., the current series on "Warp Sizing" will be reprinted upon completion next year. In the meantime, we send gratis six copies of the July


BALL BEARING HEAD
HEAD MAY BE ROTATED
BALL BEARINGS ON ALL SHAFTS
STRONG TUBULAR STEEL STAND
MOUNTS LEFT OR RIGHT HAND ON ANY MAKE CARD
BALL BEARING CAN TABLE WITH ROLLER CHAIN DRIVE
BASE MAY BE ROTATED

HERE IS SOUTHERN STATES' NEW COILER WITH EVERY FEATURE MILL MEN WANT

The Southern States line of Coilers and Conversion Units has been vastly improved. Every engineering and operating feature desired by mill men has been included.

Now mills can profit by a coiler that will operate at peak efficiency, require a minimum of maintenance, and provide years of trouble-free service.

These streamlined, compact, premium-quality coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical.

It will pay you to get complete information and find out how these improved Southern States Coilers and Conversion Units will profitably improve your operations.

ADDITIONAL FEATURES THAT MAKE IT THE FINEST OF ALL

- **Available for all can sizes**
- **Cut tooth gears throughout**
- **Self-aligning pillow blocks on upright shaft**
- **Self-aligning pillow blocks on calendar roll shaft**
- **Precision-ground cast iron calendar rolls**
- **Fully adjustable can table**
- **Quickly detached coil spring roll-loading device**

WRITE FOR TECHNICAL BULLETIN No. 203-a

SOUTHERN STATES EQUIPMENT CORP.
HAMPTON, GEORGIA

ANHEUSER-BUSCH, INC.

ANHEUSER-BUSCH, INC.

Sign of highest quality

STARCHES
Standard and Homogenizer starches for warp sizing and finishing.

DEXTRINES
Warp sizing, printing, dyeing and finishing.

GUMS
Warp sizing and finishing.

Sales offices . . . CORN PRODUCTS DEPT.

ST. LOUIS, MISSOURI
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314 Girod Street

KALAMAZOO, MICHIGAN
1122 Royce Avenue

NEW YORK, NEW YORK
33rd St. and 12th Ave.

CHICAGO, ILLINOIS
750 So. Clinton

CHARLOTTE, N. C.
1208 Johnston Bldg.

COLUMBUS, GA.
2319 Hamilton Rd.

SAN FRANCISCO, CALIF.
465 California

CAMBRIDGE, MASS.
111 Sixth Street

PHILADELPHIA, PA.
328 E. Chelten Ave.

Shorts and Remnants

article of this series.

To J. P. Stevens & Co., Inc., Greensboro, N. C., the open house of the Wallace, N. C., plant was covered in our July '56 issue. We hope it was of interest.

The U. S. Tariff Commission is worried about some blank pages in Nov. '55. It wasn't on purpose, although we might try that some month—just leave a few blank pages for your reminder pad, or just so you can sit and wonder what might have been there, or maybe fill it in with your own article.

May '56 issue elicited requests for three reprints each on "Causes and Detection of Damage in Raw Cotton," "Spinners—Here's one Mill's Program for Buffing Rolls," and "Construction and Weave Are a Big Part of Fabric Hand" from the Research and Development Division of Callaway Mills Co., LaGrange, Ga.

Want to Buy

F. J. Catterall, Supt. Gallagher Cotton Mills, Tarpon Springs, Fla., wants machinery to put up 18-inch dish toweling into 15- and 25-yd bolts.

Norman R. Cobb, Des. Engr. Hood Rubber Co., Div. B. F. Goodrich Co., Watertown, Mass., wants information on machines to cut fabric on bias.

I. Barnett, Barnett Woolen Mills, Milwaukee, Wis., writes "We wish to get in touch with firms who make equipment for stitching yarns onto cotton or jute bases to make carpets in pile or loom effects, as is used quite broadly in making moderate priced carpeting. . . . "

J. D. Kennedy, Avondale Mills, Alexander City, Ala., wants data on "Springs to Keep Filling Tight on Thread Guides," described in "How Other Men Manage" Department [June '56].

Clifford B. Hayes, consultant, Spartanburg, S. C., wants name of manufacturer of Tam-O-Shanter polishing stones for copper print rollers [May '56].

Tufted Textiles

Requests for reprints or for more data on tufted textiles [June '56] come from Boras Wafveri Aktie Boiag, Boras, Sweden; **P. M. Komos,** Aldon Rug Mills, Lenni, Pa.; **W. E. Lloyd,** E. T. Barwick Mills, Dalton, Ga.; British Rayon Research Assn.,

Sharpest Question in the woolen and worsted field right now is this: "*How to be competitive in pick-and-pick fabrics?*" And the answer is this: C&K's W-3 and W-3A SELECT-A-PIC LOOMS . . . which permit automatic bobbin-changing operation with automatic work-assignments on many fabrics which would otherwise be woven non-automatically. Several hundred SELECT-A-PIC LOOMS, in highly profitable operation today, have woven performance records which should be keenly interesting to you. We'll tell you about these records any time you like. Just write:

CROMPTON & KNOWLES *Corporation*

WORCESTER 1, MASSACHUSETTS, U. S. A.

CHARLOTTE, N. C. • PHILADELPHIA, PA. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada Ltd., Montreal, Quebec

First floor entrance of Vertical Reciprocating Conveyor handling incoming filled cases of celanese yarn to second floor. Conveyor can be reversed to return empty cases to first floor. Operation is automatically controlled by push buttons.

The LEADERS use Logan

"Hitch your wagon to a star" is a philosophy which helps to make our industrial leaders. Part of this philosophy is the exercise of care in the selection of vital plant machinery such as conveying equipment. In thousands of successful establishments Logan Conveyors speed output, increase capacity in the same plant, conserve manpower, make satisfied employees. Logan can serve you, too. Write for further information or for nearest engineer to call.

LOGAN CO., 206 CABEL ST., LOUISVILLE 6, KY.

Logan Conveyors

Shorts and Remnants

Manchester, Eng.

► Just one note of nostalgia about the passing of the Big Top. It's going to be tough to tell the young'uns glued to television versions of "Big Top," "Super Circus," etc., that it just aint the same as getting up at dawn to see the circus unload, to watch the tent go up, and the animals herded down from the train.

It's not the same as standing three deep to watch the wonders of a circus parade, to listen to the booming tones of the Calliope.

It's not the same as stealing lumber (afterwards returned) to build a lemonade and hot dog stand outside the grounds. The lemons vanished but the ice, sugar, and water held out; and the hot dogs were reasonably hot; and a $17.00 profit for 18 hours work was even worth missing the show and easier than carrying water for the elephants, too. Mr. Ringling, say it isn't so—just for one more round.

Twill & Matting Mills, Note

"Please send us a list of several leading manufacturers, who are especially producing Twills and Mattings, etc., for army, navy and air force."

CHANNY HIOE
Dir. Yoeng Ngi Textile Factory
Djakarta, Indonesia

Wants Luther Patents

"Will you please send us one copy of the TEXTILE INDUSTRIES for May 1955 or, if this is not possible, a copy of the article on Luther patents."

MILTON M. MYERS
Clarence L. Meyers Co.
Philadelphia, Pa.

Tables for Converting Yarn Weights?

"Would you possibly be able to supply me with tables by which, at a given humidity (and temperature), I might be able to convert (1) viscose, (2) wool, (3) nylon, (4) cotton, and (5) jute yarn weights to standard weights for the particular fiber."

HAROLD A. WESELIUS
Aldon Rug Mills, Inc.
Lenni Mills, Pa.

► Anybody know where such tables are published? We'd like to have them ourselves.

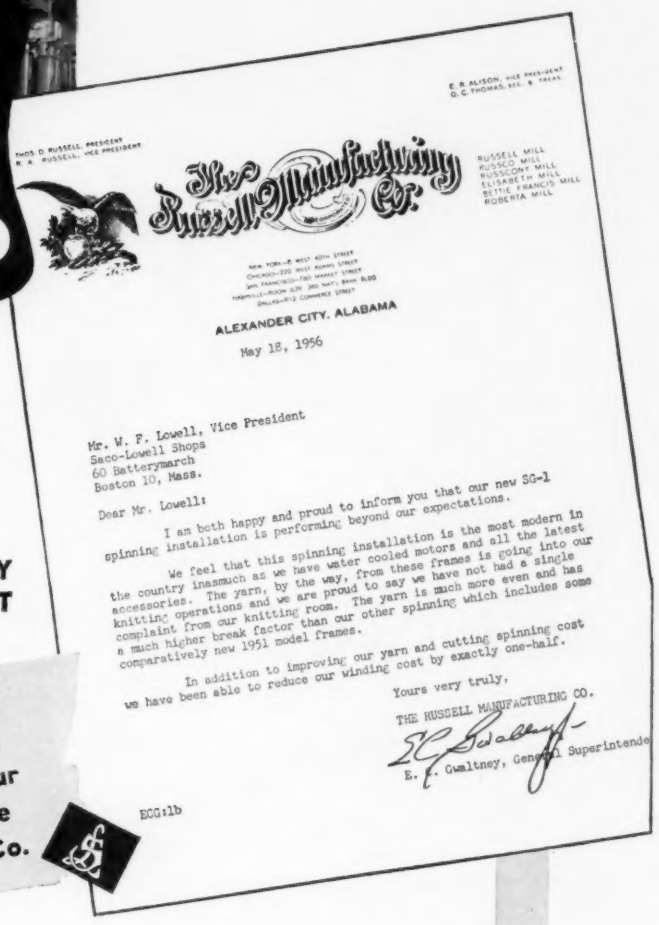
(Continued on page 14)

NO. 4 OF A SERIES

FACTS NOT RUMORS *about*

SACO-LOWELL GWALTNEY SPINNING

THE ONLY REVOLUTIONARY SPINNING IMPROVEMENT IN OVER 100 YEARS



E. R. ALISON, VICE PRESIDENT
O. C. THOMAS, SEC. & TREAS.

THOS. D. RUSSELL, PRESIDENT
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The Russell Manufacturing Co.

RUSSELL MILL
RUSSELL MILL
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CHICAGO—222 WEST ADAMS STREET
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NASHVILLE—ROOM 329 3RD NAT'L BANK BLDG
DALLAS—912 COMMERCE STREET

ALEXANDER CITY, ALABAMA

May 12, 1956

Mr. W. F. Lowell, Vice President
Saco-Lowell Shops
60 Batterymarch
Boston 10, Mass.

Dear Mr. Lowell:

I am both happy and proud to inform you that our new SG-1 spinning installation is performing beyond our expectations.

We feel that this spinning installation is the most modern in the country inasmuch as we have water cooled motors and all the latest accessories. The yarn, by the way, from these frames is going into our knitting operations and we are proud to say we have not had a single complaint from our knitting room. The yarn is much more even and has a much higher break factor than our other spinning which includes some comparatively new 1951 model frames.

In addition to improving our yarn and cutting spinning cost we have been able to reduce our winding cost by exactly one-half.

Yours very truly,

THE RUSSELL MANUFACTURING CO.

E. C. Gwaltney, General Superintendent

ECG:lb

"Performing beyond our expectations . . . not a single complaint from our knitting room" says the Russell Manufacturing Co.

MORE FACTS . . .

Operating information on Russell Knitting Yarn Frames

Count	T. M.	Ring Size	F. Roll Speed	Eff. *%	Net Pounds Per **Frame Per 24 hours
7.25's	2.85	3"	200	94	930
10's	2.94	3"	201	95	686
11's	2.94	3"	197	95	611
13's	2.94	3"	199	95	523
17's	3.00	3"	186	96	378
18's	3.00	3"	185	96	355
24's	3.12	3"	155	97	224
26's	3.25	3"	147	98½	200
28's	3.25	3"	143	99	182

* Efficiency includes traveler change and frame change down times.
** Taken from actual Hank Clock daily readings on 240 spindle frames.

More than 70 mills, operating over 450,000 spindles of Saco-Lowell Gwaltney Spinning, are producing stronger, more even yarns of highest possible quality at important reductions in cost. A Saco-Lowell Engineer will be glad to prepare "A Forecast of Savings" for your mill.

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

Robert E. De Lapp, Jr., T.E. N.C. State '50, Sales Repr., Starch company, synthetic fibre manufacturer to 1954; Technical Sales Repr., Southern Sizing Company, 1954.

BUT HE WORKS FOR YOU!

If you have a sizing problem in your mill, the logical thing to do is to get a sizing expert to solve it for you.

Put in a collect call to Southern Sizing Company or contact one of our representatives today! We have six men on our payroll whose job it is to help you make your mill run better. All are experienced engineers and all know weaving and slashing inside and out. One or more of these men is located near you.

We're the first to admit they aren't the prettiest guys in the business but we know they're the best when it comes to solving your sizing problems. Superior service and superior size are our two stocks-in-trade.

SSC Sizing and Service Salesmen left to right, Jimmie D. Walker, Robert V. May, B. G. Stumberg, Jr., Walton Simmons, C. Russell Gill.

SOUTHERN SIZING COMPANY

SUPERIOR SIZE. SUPERIOR SERVICE

East Point, Georgia

PHONE POPLAR 1-8871

SSC

Shorts and Remnants

(Continued from page 12)

Full-Fashioned Handling

"I would appreciate a reprint of the article 'This Mill Streamlined Handling of Full-Fashioned Hosiery' [Dec. '55] . . . "

DAVID BRODY
Van Raalte Company, Inc.
New York, New York

Damage In Raw Cotton

"Please send me a reprint or tear sheets of the article entitled 'Causes and Detection of Damage in Raw Cotton' [May '56] . . . This well written article suggests methods for determining causes of unexpected failures of industrial rubber products. . . "

C. H. SCHROEDER
Textile Manager
The B. F. Goodrich Co.
Akron, Ohio

How to Make Neps (1940)

"Could you furnish us a copy of the article, 'How to Make Neps on a Card. . . . [Sept. '40]. . . "

STANLEY MARTIN
Commander Mills, Inc.
Sand Springs, Okla.

Wants Quality Control Section

" . . . It would be a good idea if you always have in your magazine a section devoted specially to 'Practical Quality Control'. You could start with fundamentals and keep on with harder problems. It would be a great help to us Quality Control men in every mill. . . . "

GERARDO POZAS S.
Hilados Del Norte, S.A.
Monterrey, N. L., Mexico

► A good idea, Sr., but material on quality control is not always available. How about a starter from you.

Honeydew and Cavitomic

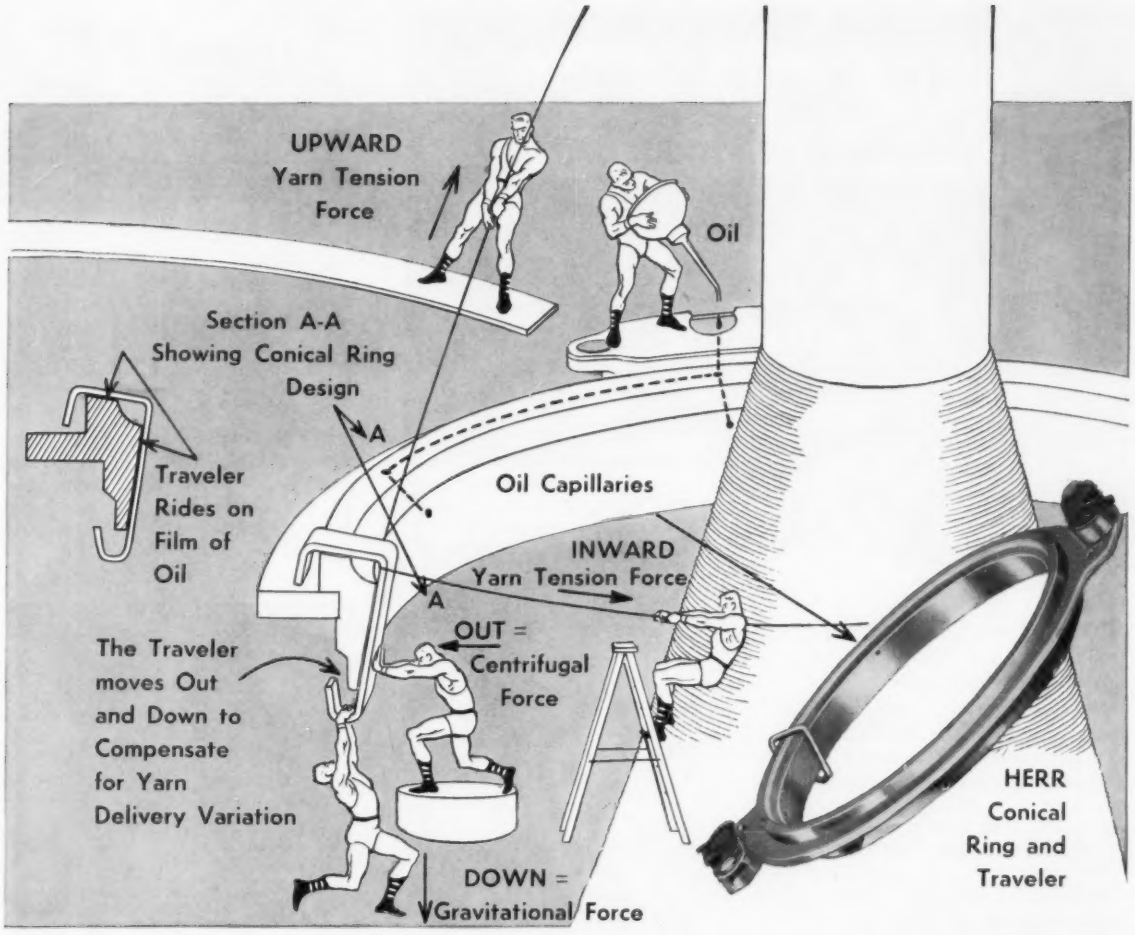
" . . . Your information on honeydew and/or Cavitomic is most welcome. . . . "

JOHN PEACOCK
"Shira"
Paisley, Scotland

Tracing Bad Work

" . . . I would appreciate your sending me three reprints of the article 'How One Mill Traces Bad Work' [Dec. '55]. . . . "

C. W. GAYLER
The Chemstrand Corp.
Decatur, Ala.



HERR Conical Ring Design forces the traveler out and down, equalizing the yarn tension!

RESULTS

- Yarn breakage is prevented
- Yarn is smoother
- Heavier More Uniform Doffs
- Minimizes Wear on Ring and Traveler

Ask for help on your problem.

The Herr Conical Ring Design equalizes the yarn tension forces (upward and inward) and the Traveler centrifugal and gravitational forces (outward and downward). These opposing forces are balanced and the traveler rides on the ring with minimum frictional contact.

Reservoirs feed oil to the capillary openings. The Traveler distributes this oil to form a microscopic film on which it rides permitting maximum spindle speed with minimum Ring and Traveler wear.

If you spin or twist confer with Herr.

Please send technical literature on Conical Rings ☐ Herr Flyers ☐

NAME..... TITLE.....

COMPANY.....

ADDRESS.....

CITY..... STATE.....

HERR

MANUFACTURING CO., INC.

310 FRANKLIN STREET, BUFFALO 2, NEW YORK

These men *know* the profitable meaning
of Davis & Furber
"Coordinated Production"

This is "Coordinated Production" in practice — planned jointly with Draper Bros. and Davis & Furber — executed and carried through in *all phases* by D&F as *one* qualified, responsible source. Working closely with the customer, through their Technical Service and Counsel, here's how Davis & Furber can do the same for you.

The FIRST part of D&F's established plan to increase your mill production is an "in-the-mill" survey with recommendations by D&F service technicians. They know mill operation from nationwide experience . . . and they know best what D&F equipment can do.

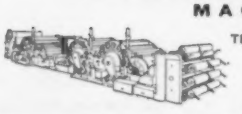
The SECOND step toward "Coordinated Production" is the special adaptation, when necessary, of new equipment to your specific requirements by D&F design engineers, or the modernizing of existing equipment to meet present needs.

The THIRD point is the use of D&F trained erectors and technicians to install, adjust, and set up actual production runs on D&F equipment, with follow-up to assure peak performance and production.

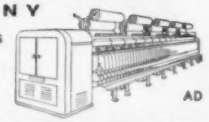
Davis & Furber and Draper operators and management, working hand-in-hand, have fulfilled the promises of D&F "Coordinated Production" in this woolen mill. Its features have benefited others. Check and see how they can benefit you. Call Davis & Furber now for complete details, at either North Andover, Mass., or Charlotte, N. C.

Helpful facts for mill managers, superintendents, overseers. Monthly D&F NEWS — copies on request.

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 11-6

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

Personal NOTES
ABOUT MEN YOU KNOW

At the Russell Hosiery Mill, Inc., Star, N. C., **Charles E. Crutchfield,** formerly in charge of manufacturing for men's and children's divisions of the hosiery division of Burlington Industries, Inc., has accepted an executive position with headquarters in Star.

Ted M. Kersher, formerly chief textile engineer, has been appointed manager of fabric development for all tire divisions of The Goodyear Tire & Rubber Company, Akron, Ohio.

Mr. Kersker

Mr. Hotte

The Council of the Textile Institute, Manchester, England, has named **George H. Hotte,** F. T. I., convenor of the U. S. A. panel. As convenor, he will preside over meetings of the American panel and take charge of all communications.

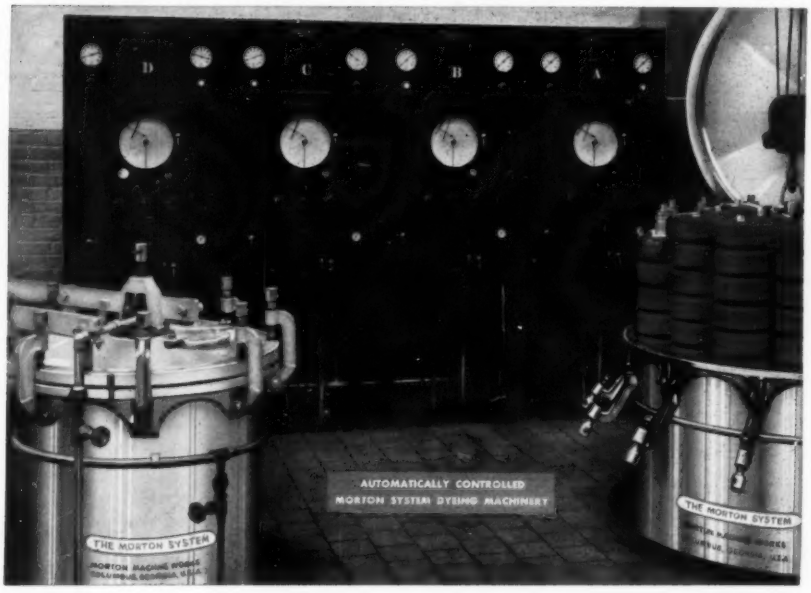
At the Abbeville (S.C.) Mills Corp., **Robert C. Edwards** has relinquished his post as treasurer and general manager to become vice-president in charge of development at Clemson College. **George Asnip,** already general manager of the worsted group of Deering Milliken & Co., Inc., has also been named treasurer of Abbeville Mills Corp. to succeed Mr. Edwards. **L. J. Fisher,** manager of Gerrish Milliken Mill, Pendleton, S. C., has been named manager of Abbeville Mills Corp. Succeeding Mr. Fisher at Gerrish Milliken Mill is **W. E. Thrailkill,** presently superintendent of Kingsley Mills Corp. at Thomson, Ga. Succeeding Mr. Thrailkill is **Will S. Manning,** superintendent of Gayley Mill Corp., Marietta, S. C. Succeeding Mr. Manning at Gayley Mill Corp. is **Raymond C. Owings,** presently technical superintendent at Drayton Mills,

(Continued on page 22)

MORTON SYSTEM . . . .

MASTER DYER AUTOMATIC CONTROLS FOR USE WITH DYEING, BLEACHING AND DRYING MACHINERY

★ Control: Temperature with Rate of Rise and Records — Directional Flow of Liquid and Time Cycle Records for matching colors with Accuracy — Indicating Lights and Warning Signals — Pressure Gages — Flow Control — Pump Switch — May be operated fully automatic or semi-automatic. —



The Master Dyer is not a substitute for technical knowledge or plain "know how". It will not replace the skill or human element, but will be most valuable as a helping friend. We believe them to be worth while in any dye house operation. They are simple to maintain and understand. Let us discuss your operations and then determine the type Automatic Controls that will best suit your production.

Manufactured by:

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:

BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS.

OUT OF THIS BLACKNESS

COLOR

—for a more colorful world

This year, nations the world over join to salute the pioneering work of William Henry Perkin. One hundred years ago, the young English laboratory assistant—while experimenting with derivatives of the distillates of coal tar—found a method to make the first synthetic dye.

He carried his discovery *from research to reality.* Within a bare six months, silk dyeing—with Perkin's Mauve—was a practicality.

Inspired by Perkin's achievement, the synthetic dyestuff industry soon grew—and with it grew a whole profession of chemists. Research carried on by these specialists advanced scores of industries—from medicines to synthetic fibers—and formed the basis of Organic Chemistry as we know it today.

The Dyestuff Industry acknowledges its direct debt to William Henry Perkin, as synthetic dyes—in their endless applications in textiles, papers, leathers, plastics, paints, and inks—day by day contribute to a more colorful world.

from Research to Reality

We at GAF are proud of our part in the thriving Dyestuff Industry. The history of our progress—from the introduction of synthetic dyes on the American market, to the perfection of the latest dyeing methods—gives real meaning to our motto.

Our present line of products, manufactured at Linden, New Jersey, and at Rensselaer, New York, is recognized and established in each field of application. Major product groups of particular interest are:

ALGOSOL®—water-soluble leuco esters of vat dyes for dyeing and printing cotton, rayon, silk, wool, some of the newer synthetic fibers, and (just recently and successfully) leather.

CELLITON®—disperse dyes for general use in dyeing and printing acetate, nylon, and other synthetic fibers.

FAST COLOR SALTS AND BASES—for dyeing and printing cotton and rayon with bright shades combined with good fastness properties.

FASTUSOL®—direct dyes of good (5) or better light fastness for dyeing cotton, rayon, silk, paper and leather.

GENACRYL®—straight water-soluble basic dyes of a new type which give bright strong shades on acrylic fibers characterized by very good light and wet fastness.

HELIO®—pigments of excellent fastness to light for coloring and coating paper and for coloring synthetic fibers in the mass.

HELIOGEN®—phthalocyanine pigments of exceptional fastness to light, acid, alkali, and chlorine for coloring paint, plastics, paper, and synthetic fibers in the mass.

INDANTHRENE®—vat dyes of exceptional fastness to light, washing and chlorine for dyeing and printing mainly cotton and rayon.

NAPHTOLS—insoluble azo dyes of fairly-good to excellent fastness properties formed in a two-step process on cotton and rayon.

PALATINE®—metallized acid dyes of very good fastness properties dyed on wool from a strongly acid bath; used also on silk, nylon and leather.

RAPIDOGEN®—stabilized azoic compounds for printing cotton and rayon.

SOLAR®—fast to light, water-dispersible pigments prepared from phosphotung-state-molybdate lakes of basic dyes used for tinting paper.

SUPRALAN®—neutral-dyeing premetallized acid dyestuffs for dyeing wool and synthetics.

Complete information and technical service are always gladly offered.

gdc gaf

GENERAL DYESTUFF COMPANY

A SALES DIVISION OF

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435 HUDSON STREET • NEW YORK 14 • NEW YORK

BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO • IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

THE *Newest* PACKAGE
IN THE TEXTILE INDUSTRY

SEE IT OPENED!

SPACE 832-33-34
SOUTHERN TEXTILE EXPOSITION
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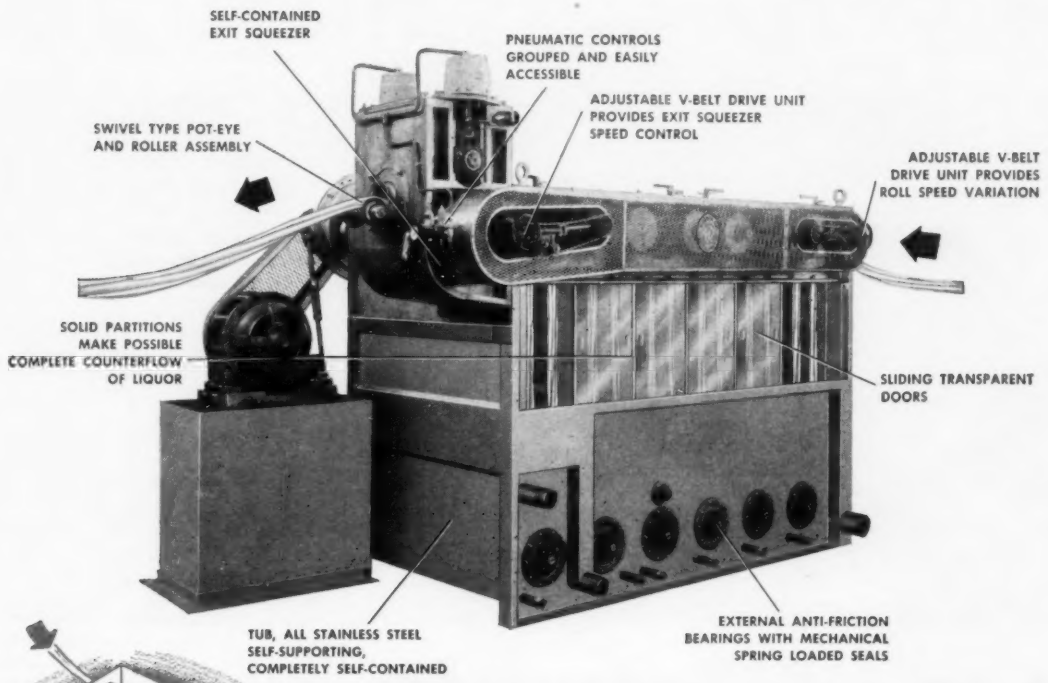
COMPANY
WINSTON-SALEM, N.C.

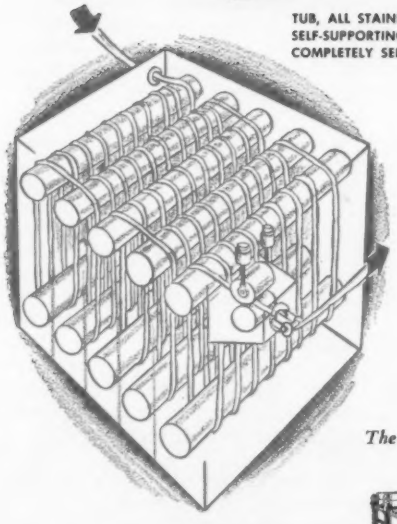
COLLECTO-VAC • OPEN-AIRE CREEL • TRAVELING CLEANERS • AIR CONDITIONING

WIESNER-RAPP

"Multi-Stage"*

TENSION CONTROL ROPE WASHER


SELF-CONTAINED EXIT SQUEEZER
PNEUMATIC CONTROLS GROUPED AND EASILY ACCESSIBLE
ADJUSTABLE V-BELT DRIVE UNIT PROVIDES EXIT SQUEEZER SPEED CONTROL
SWIVEL TYPE POT-EYE AND ROLLER ASSEMBLY
ADJUSTABLE V-BELT DRIVE UNIT PROVIDES ROLL SPEED VARIATION
SOLID PARTITIONS MAKE POSSIBLE COMPLETE COUNTERFLOW OF LIQUOR
SLIDING TRANSPARENT DOORS
TUB, ALL STAINLESS STEEL SELF-SUPPORTING, COMPLETELY SELF-CONTAINED
EXTERNAL ANTI-FRICTION BEARINGS WITH MECHANICAL SPRING LOADED SEALS



FOR BLEACHING RANGES OR AS INDIVIDUAL UNITS

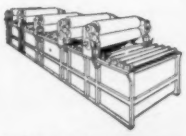
Versatile . . . Compact . . . Economical . . . Accessible

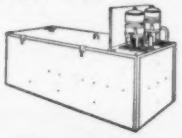
This totally-enclosed, high-speed (300 ypm) multi-stage washer, of all stainless steel construction, will soap, wash, or treat a wide range of fabrics of various weights. It is compartmented to combine chemical or hot and cold processing. Auxiliary squeezers are designed to mount over any compartment. Great savings in water are possible because the washer is compartmented for positive counterflow. All compartments are free-draining and easily cleaned for quick changes from colored to white goods. Designed and built to Wiesner-Rapp high standards; requires minimum maintenance.

*Trade Mark—Patented

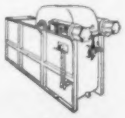
The Wiesner-Rapp technical staff will be glad to discuss Multi-Stage features with your personnel

OTHER WIESNER-RAPP MACHINES


OPEN-WIDTH WASHER

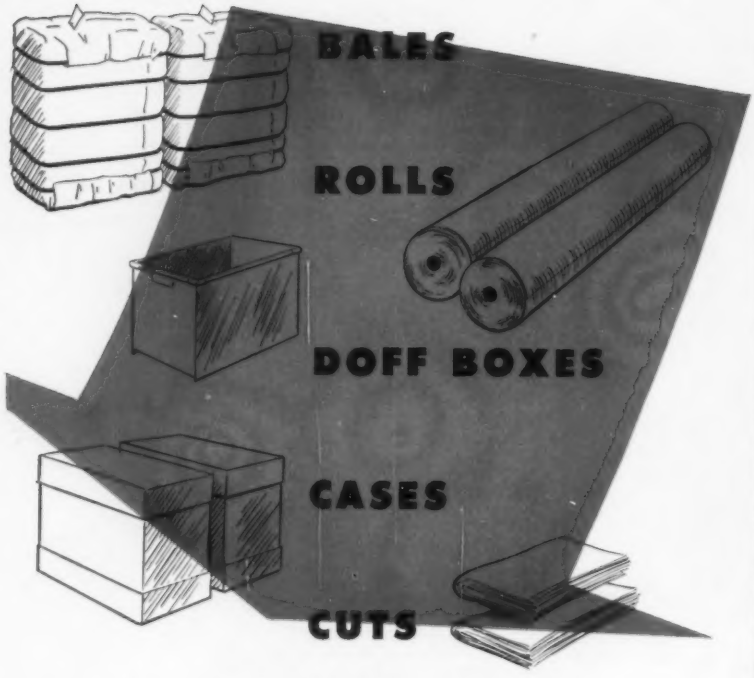

SKEIN DYE KETTLE

DYE BECK


BAROTOR

THE WIESNER-RAPP CO., INC.
1615 SENECA ST., BUFFALO 10, N. Y.
Manufacturers of Textile Finishing Machinery

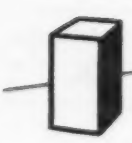
In mills that are "going places"...



go on ALVEY conveyors

The list of mills using ALVEY-Engineered Conveyor Systems reads like a "Who's Who" of the textile industry. And, the names that will be famous are the ones that are installing ALVEY equipment today.

Let a textile-experienced ALVEY engineer show you the modern way to plan your progress... through greater yield with lower overhead... on ALVEY conveyors.



Every time you MANhandle a product, you add to its cost... *without* increasing the value.

So, for profit's sake... ***convey*** your products.

ALVEY

ALVEY CONVEYOR MANUFACTURING COMPANY
9306 Olive Street Road • St. Louis 24, Missouri
Branch Offices in Principal Cities

234

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 16)

Spartanburg, S. C. **J. H. Cross, Jr.,** is now assistant manager of the worsted group.

Now superintendent of the knitting department of Wiscassett Mills Co., Albemarle, N. C., is **Jack Chivington,** formerly superintendent of Davenport Hosiery Mills, Inc., Chattanooga, Tenn.

Berkshire Knitting Mills, Reading, Pa., has named **Ferdinand K. Thun** as chairman of the board. **John W. Bowman** has been named president to fill the vacancy left by Mr. Thun's promotion.

At the recent election of Cowikee Mills, Inc., Eufaula, Ala., **Donald Comer, Jr.,** was named president and treasurer, succeeding L. Comer Jennings who has resigned.

At the Cramerton (N.C.) division of Burlington Industries, Inc., **William B. Croxton** is now group manager of the Cramerton Plants, a position formerly held by **William F. Gaston** who resigned because of ill health. Mr. Croxton had been associated with Amerotron Corp., Aberdeen, N. C., as manager of the technical and quality control departments of the synthetics division.

Named vice-president of manufacturing, a newly-created post for Dominion Textile Co., Ltd., Montreal, Canada, is **Julien B. Cumming** who previously was manufacturing general manager. Named special assistant to the vice-president, manufacturing, is **Kenneth C. Mills,** formerly special assistant to the manufacturing general manager.

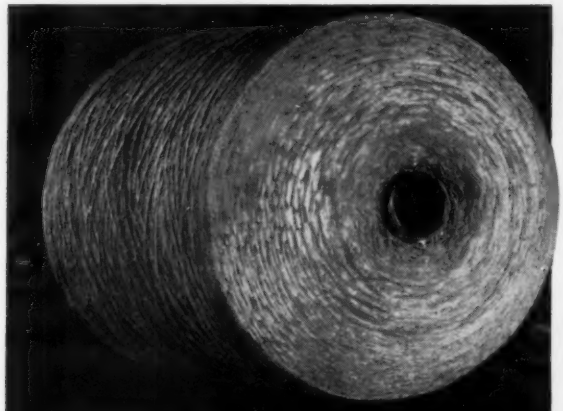
New plant manager of the Pine Tree Co., Dahlonega, Ga., carpet yarn mill, is **Jack Darlington.**

S. Benton Davis, formerly general manager of the Gainesville, Fla. division of No-Mend Hosiery, Inc., has accepted a position as general director of personnel for Southern States Iron Roofing Co. in Atlanta, Ga.

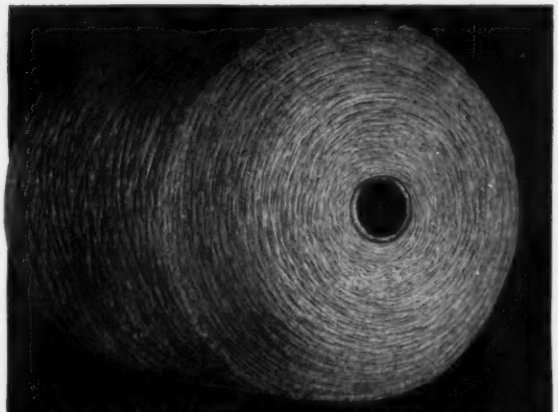
A recent issue of "The Callaway Beacon," official publication of Calla-Mills, Co., LaGrange, Ga., devoted almost an entire page to the story of the retirement as overseer of warehouse and yard at Unity spinning

You don't add objectionable calcium when you use

MORTON '999' SALT *Chemical Grade*



Ordinary salt high in calcium and magnesium content can cause you trouble in the form of off-shading, cut threads, costly shutdowns.



Morton '999' Salt is exceptionally low in calcium and magnesium content to help give softer finishes, more even shades, greater color intensity.

Morton '999' is a low-cost, high purity evaporated salt, free of objectionable calcium and magnesium compounds. '999' is 99.9% clean, pure sodium chloride for use whenever low calcium salt is needed.

As the chart, below, shows, for direct salting you may reduce the total calcium content by as much as 1950 parts per million by using '999' instead of common grades of ordinary salt. Where you are investing time and money in turning out a quality product, Morton '999' Salt is low-cost insurance against dyeing failures caused by excessive calcium in salt.

Available in 100-lb. bags or bulk, '999' is specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct or naphthol dyes.

MORTON SALT COMPANY
Industrial Division, Dept. TI-9
120 South LaSalle Street
Chicago 3, Illinois

___ Please send me more information about Morton '999' Salt.

___ I would also like to know how much I can reduce calcium and magnesium content by using Morton '999' Salt. Please have a Morton Brine Engineer call on me to explain the benefits of using '999' Salt.

Name_____

Title_____

Company_____

Street Address_____

City_____ Zone_____ State_____

Ordinary salt averages 125-2000 PPM	PPM Calcium and Magnesium	Morton '999' Salt (Chemical Grade) is guaranteed to contain less than 50 PPM

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. TI-9, 120 So. La Salle Street, Chicago 3, Illinois

Tennant shows 127-year-old EXETER MANUFACTURING CO.

how to make floors TWICE as bright — at ½ the cost

Here, in America's oldest cotton mill (in continuous use since 1827), the TENNANT System works its modern magic on the famous floors in Exeter, N.H.

You see the results above. The *tennantized* area (right) is easily twice as bright as before. Yet mills tell us it costs about 50% less to get such results *today* than it did just 5 years ago.

Here's why. Improved Tennant techniques now make floors far brighter, more dirt-resistant. Result: you save 40% to 60% in manhours, buff only 1/5 to 1/10 as often as before, and get 4 times longer average life from newly developed floor seals.

Write today; ask for estimate of NEW savings now possible in your mill.

VERY LITTLE BUFFING is needed today to keep Exeter's historic floors bright. Mill was built shortly after War of 1812.

TENNANT
ESTABLISHED 1870

G. H. TENNANT CO.
2524 N. 2nd Street
Minneapolis 11, Minn.

FLOOR MAINTENANCE SYSTEM

Personal NOTES ABOUT MEN YOU KNOW

division, of **R. L. "Rube" Farrar,** who, in June of 1956, had been associated with the Callaway plants for fifty years. * * * Promoted from testing supervisor to head of the testing laboratory in the research and development division is **Robert L. Gross,** who succeeds W. P. Cofield, Jr. * * * At the Manchester, Ga., plant, **Phil Webb,** formerly a trainee in the carding, twisting, spooling, and weaving departments, has been promoted to assistant overseer of spinning.

Adler Co., Cincinnati, Ohio, recently announced that **Bill Fette** has moved his office to the firm's stockinette plant which is located at 2450 Beekman St., where, in addition to purchases, he will have charge of stockinette manufacture.

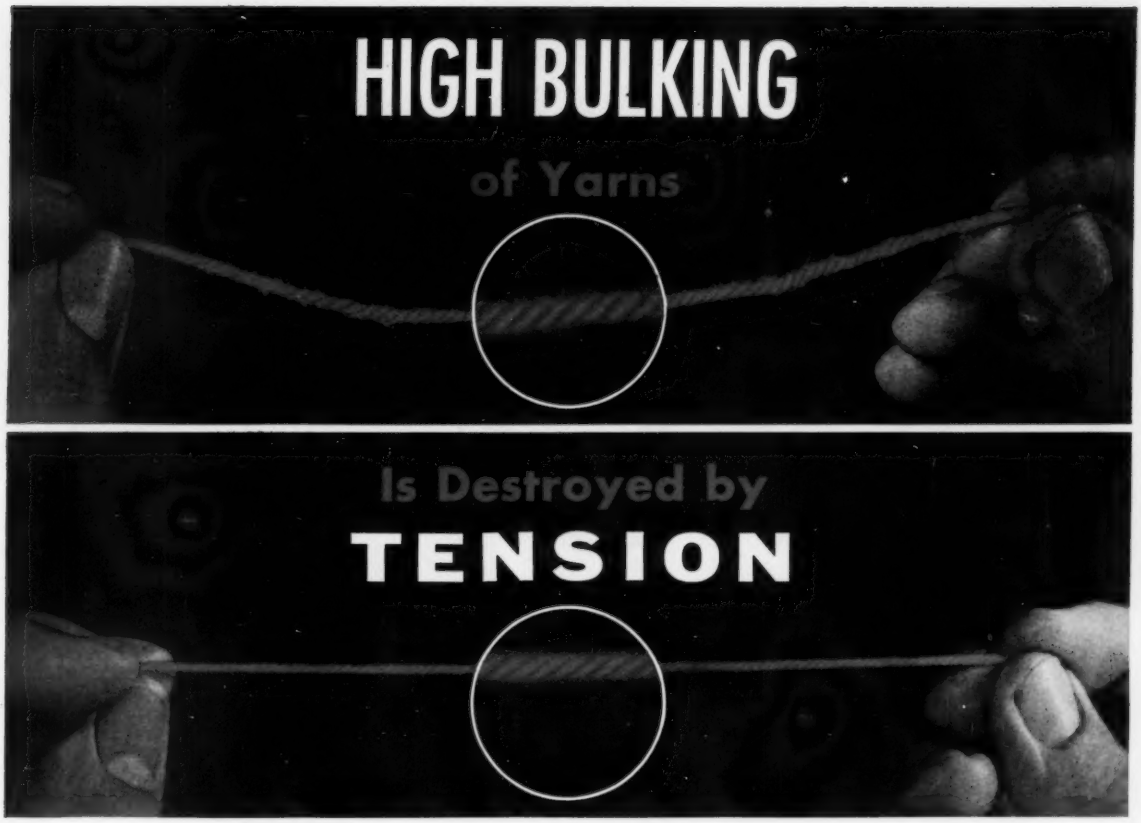
The Pi chapter of Alpha Kappa Psi fraternity recently initiated **Robert O. Arnold** of Covington, Ga., president of Fulton Bag & Cotton Mills, Atlanta, Ga., and a director of Dan River Mills, Danville, Va.

R. J. Robertson, manager of the Hazleton, Pa., mill of The Duplan Corp., has announced his intention to retire on October 31 of this year. Mr. Robertson has been with the firm 13 years. **Michael Stefanchick,** who has been superintendent of the Hazleton plant, will serve as assistant manager until Mr. Robertson's retirement, at which time Mr. Stefanchick will become manager.

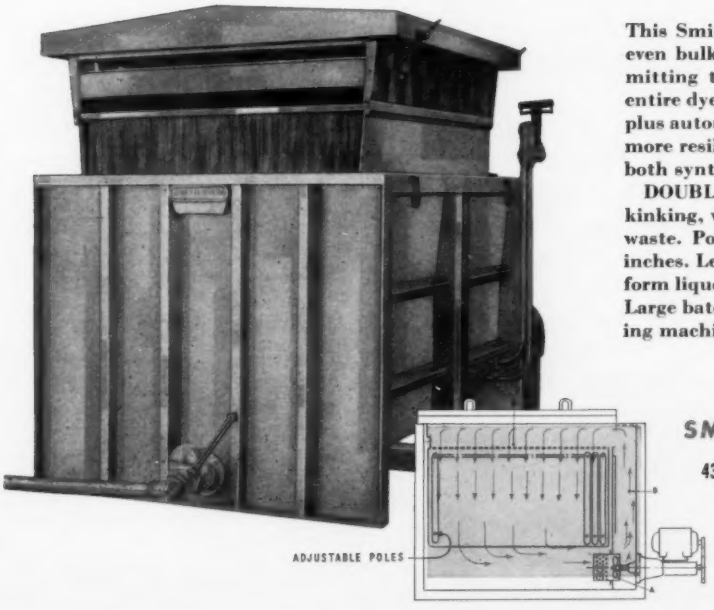
Promoted to superintendent of the Catherine Mill of Avondale Mills, Sylacauga, Ala., is **William A. Edwards, Jr.,** formerly assistant to W. A. Turner, Avondale vice-president and general superintendent. The position was created by the addition of an opening room to the central plant which separated its operations from those of the Catherine plant.

Vice-president in charge of sales, a new position at Chester Tricot Mills, Inc., Kennett Square, Pa., is **Harry Eisenberg,** who is also president of Citation Fabrics, Inc. New York City.

At Neisler Mills, Inc., Kings Mountain, N. C., a division of Massachusetts Mohair Plush Co., Inc., **Clarence Flowers** succeeds Howard B. Jackson as merchandising manager; and



SMITH-DRUM Pulsating Skein Dyeing Machine Keeps Yarns *Relaxed*



This Smith-Drum machine maintains the high, even bulking characteristics of ORLON* by permitting the yarn to remain relaxed during the entire dyeing process. The pulsating flow feature, plus automatic flow reversal, produces fluffier and more resilient yarns. The machine is suitable for both synthetic and natural fibers.

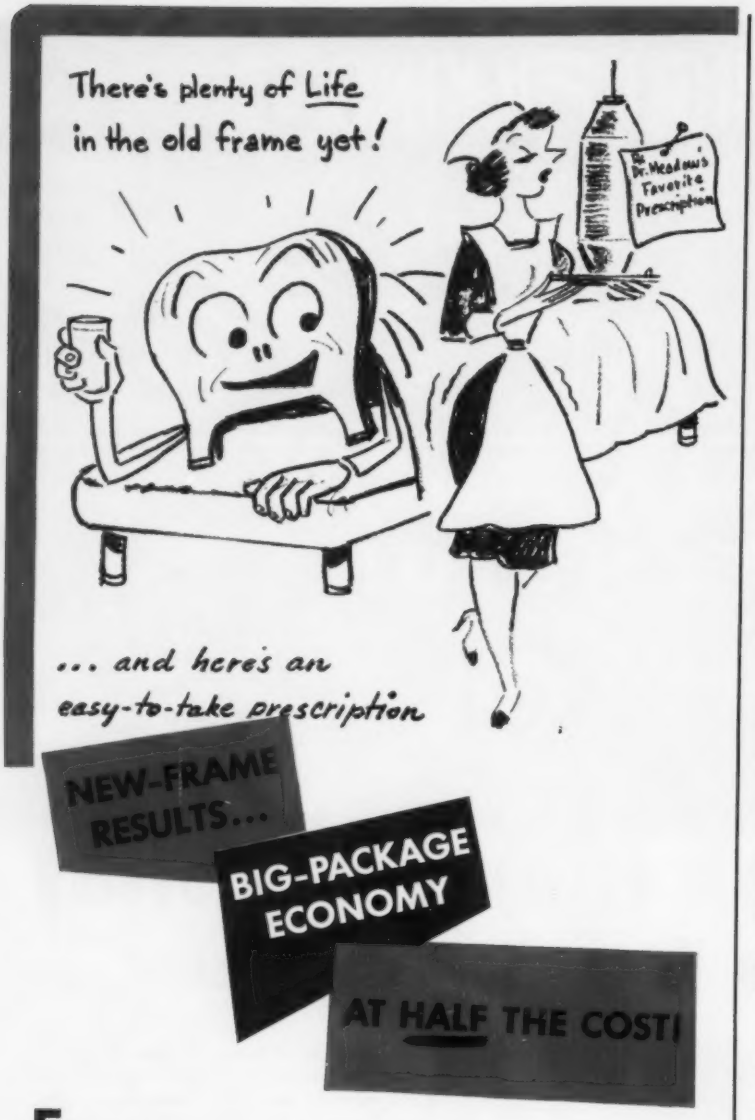
DOUBLE SET OF POLES prevents snarling and kinking, which improves winding and eliminates waste. Poles are adjustable for skeins up to 76 inches. Level dyeing is obtained as a result of uniform liquor flow throughout the dyeing chamber. Large batches may be processed by interconnecting machines. Write for complete details.

*DuPont's *trademark for its acrylic fiber*

SMITH, DRUM AND COMPANY

432 West Allegheny Avenue, Philadelphia 33, Pa.

Southern Representatives:
PARROTT & BALLENTINE
510 South Carolina National Bank Building
Greenville, S. C.


There's plenty of Life in the old frame yet!
Dr. Meadows Favorite Prescription
... and here's an easy-to-take prescription
NEW-FRAME RESULTS...
BIG-PACKAGE ECONOMY
AT HALF THE COST!

Full Meadows conversion can take your old frames and s-t-r-e-t-c-h them to handle big packages. For about half the price of new frames, you will get the quality and the production of new frames. For a quarter century we've been rebuilding old spinning and twister frames — from floor to creel if they need it — and we know our stuff.

That's an easy-to-take prescription, isn't it?

MEADOWS MANUFACTURING COMPANY

ATLANTA, GEORGIA

REPRESENTATIVES:

G. P. (Jack) STANLEY, P. O. Station A — Box 3223, Greenville, South Carolina
SAM R. HOGG, P. O. Station A, Atlanta, Georgia
MATTHEWS EQUIPMENT CO., 93-A Broadway, Providence 3, Rhode Island
WALTER S. COLEMAN, P. O. Box 782, Salisbury, North Carolina

Personal NOTES ABOUT MEN YOU KNOW

Percy F. Dilling has assumed the duties of Paul Mauney as purchasing agent in charge of yarn buying for the division.

J. C. Penney Co., Inc., announces the retirement of **Charles W. Dorn,** research laboratory director, following 26 years with the firm. Mr. Dorn expects to go into textile consultant work.

Joseph L. Eastwick, president of James Lees and Sons Co., will be president of Fontana Mills upon its erection in Robbinsville, N. C. Other officers: **Robert J. McCann,** vice-president; **Horace C. Jones,** secretary and treasurer; **F. E. Malmberg,** assistant secretary; **Bruce W. Duddy** and **Curtis C. Deardorff,** assistant treasurers. **Norman Dawson, Jr.** will be plant manager.

J. P. Stevens & Co., Inc., Greenville, S. C., has accepted the resignation of **Thomas W. Estes** as a director and member of the executive committee. He continues as a consultant to the company.

After 20 years of service with Chadbourn Gotham, Inc., Charlotte, N. C., staff finish specialist, **A. T. Glenn,** has resigned to join the firm of Scholler Bros., Inc., as North Carolina sales representative with headquarters in Burlington, N. C.

Elected to the board of Textile Hall Corp., Greenville, S. C., is **F. E. Grier,** Greenwood, S. C., president of the American Cotton Manufacturers Institute, chairman of Erwin Mills, Inc., and president of Abney Mills. Mr. Grier succeeds the late Herman Cone of Greensboro, N. C.

Election of **Robert A. Harris** as vice-president in charge of manufacing of Fieldcrest Mills, Inc., New York City, has been announced. He will continue as secretary and treasurer of the company. Mr. Harris succeeds E. W. Medberry, resigned. * * * **Marvin A. Law** has joined the Spray, N. C., plant to coordinate and expedite mill and staff functions in the development and styling of the firm's domestics. He was formerly manager of Cone Mills Corporation's synthetic division * * * At the bleachery **Carson Oakley** has been promoted to foreman of the cloth finishing de-

(Continued on page 32)

A NEW MACHINE

LUMMUS
PEPPER-SHAKER
OPENER

MADE BY
LUMMUS COTTON GIN CO.
COLUMBUS, GA., U.S.A.

To Deal with a New Problem...

The constantly increasing amount of fine pepper trash in cotton

Made by LUMMUS COTTON GIN CO.
Columbus, Georgia

Sold by AldricH MachinE Works
Greenwood South Carolina

RODNEY HUNT TEXTILE WET FINISHING MACHINERY

A LONG-TERM INVESTMENT IN SOUND ENGINEERING AND SKILLFUL STAINLESS STEEL FABRICATION

RODNEY HUNT

We honor the Centennial of Sir William Henry Perkin

For more than a century, Rodney Hunt machines have helped the textile industry maintain high production and quality at a profit. Licensed under both Becco and DuPont patents, Rodney Hunt maintains a continuing program of research and development in collaboration with these and other companies to give the textile industry the benefit of the most modern processes and equipment.

DYEING

Dye Pads • Niptrol® Dye Pads
Agers • Pad Steam Dye Ranges
Tensitrol® Steamers
Tru-Shade® Combination Washing and Dyeing Kettles
Tru-Shade Sample Dye Kettles
Tru-Shade Dye Becks and Kettles
Carpet Dyeing Machines

BLEACHING

Bleaching Rangettes* (Becco & DuPont)
Bleaching Ranges (rope or open width)
Agers • Desize Ranges
J-Boxes (Becco & DuPont)
Saturators (rope or open width)
Standard Open Width Washers
Tensitrol Steamers
Tensitrol Washers (rope and open width)

WASHING

Standard Open Width Washers
Tensitrol Washers (rope and open width)
Slack Loop® Washers
Endless Felt Washers
Tru-Shade Combination Washers and Dyeing Kettles
Yankee Clipper® Washers
Tru-Shade Scouring Machines

FINISHING

Scutchers • Extractors
Niptrol Mangles • Tensitrol Steamers
Wring-Master® Squeeze Rolls

AUXILIARIES

Batchers
Compensators (rack or swing type)
Draw Reels • Entering Equipment
Folders • Scutchers
Poteyes • Roller Poteye Guides
Reels: round, hump, triangular, oval
Rolls: wood, metal, rubber, plastic, tube cast, chrome plated, special design
Tension Bars
Whirlwind® Sample Dryers
Special Machines
Latex Backing Machines
Stainless Steel Tanks
Wring-Master Squeezers

SEND FOR LITERATURE

Catalog No. 103
Bleaching ranges, Rangettes, Washers and Saturators. Illustrations, specifications and schematic drawings.

Bulletin No. 54
Niptrol Mangle

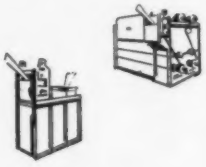
Bulletin No. 44
Textile Wet Finishing Equipment

Catalog No. 849
Tensitrol Washers. Detailed description of this unique washer and specifications.

*Trademark

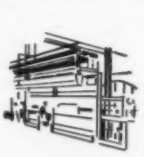
Niptrol Mangle

Tru-Shade Dye Beck

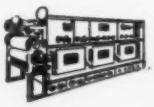


Bleaching Ranges and Rangettes

Tensitrol Washer



Tru-Shade Carpet Dyeing Machine



Tensitrol Steamer

Shaf-Tite® Rolls and Reels

RODNEY HUNT MACHINE CO.
65 Mill St., Orange, Mass., U.S.A., Tel.: Kingsdale 4-2511

DISTRICT OFFICES:
Merchantville, N. J., 8 W. Park Ave., Tel.: Merchantville 8-4357
Greenville, S. C., 121 Cleveland St., Tel.: Greenville 2-0311

"GULFSPIN keeps our spindles spinning clean and free"

*says T. F. Snipes, Overseer of Spinning of this prominent southern mill**

"WE have used Gulfspin for almost three years and have found that our 34,000 spindles stay clean with practically no sticking," says Mr. Snipes. "Also Gulfspin doesn't thicken after long usage."

In addition to the benefits mentioned above, Gulfspin provides effective protection against rust—and it reduces power costs because of its ability to maintain its original viscosity after many months of service.

You'll find that the use of Gulfspin will contribute to smoother spindle operation, fewer ends down, and rock-bottom maintenance and power costs.

Contact a Gulf Sales Engineer and let him demonstrate Gulfspin's superiority on your frames. Consult the telephone directory for the number of your local Gulf office. Visit the Gulf Booth—No. 211—at the Southern Textile Exhibition, Greenville, South Carolina.

**Name furnished upon request.*

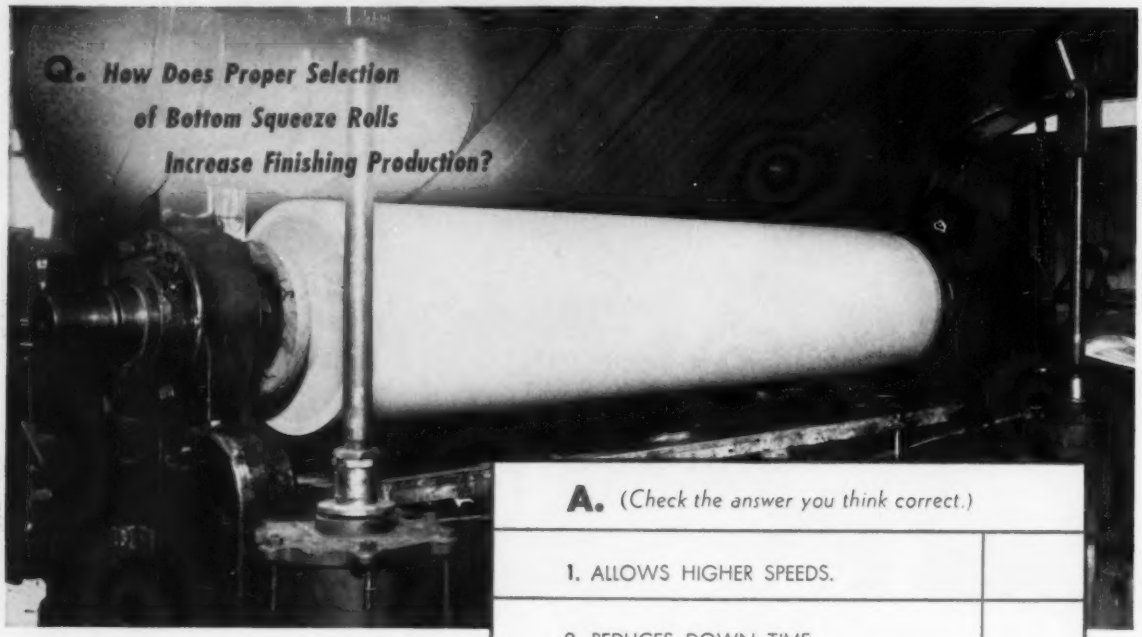
GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

1822 Gulf Building, Pittsburgh 30, Pa.

STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost



A. *(Check the answer you think correct.)*	
1. ALLOWS HIGHER SPEEDS.	
2. REDUCES DOWN TIME.	
3. REDUCES SPOILAGE.	

You'll find the correct answer in these Maintenance Tips

Too often textile men think of increased production only in terms of higher speeds. While proper roll selection does to a great degree influence the speed at which a finishing machine can be run, there are other ways in which rolls help to boost production. In many extraction applications, where hard rubber or metal bottom rolls are used, the expense of replacing these rolls goes far beyond the cost of the roll itself. The difficulty of removing heavy bottom rolls is such that it is often necessary to bring in riggers with special equipment, and the production time lost if figured in yardage makes the cost of maintenance extremely high.

When such is the case, the use of wear-resistant Microrok covering, can greatly increase the time between grindings, thereby reducing down time and increasing production. Your Stowe-Woodward Sales Engineer will be glad to explore with you the advantages of MICROROK rolls in your plant, or to answer any question regarding the care, selection, or use of rubber covered rolls.

"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

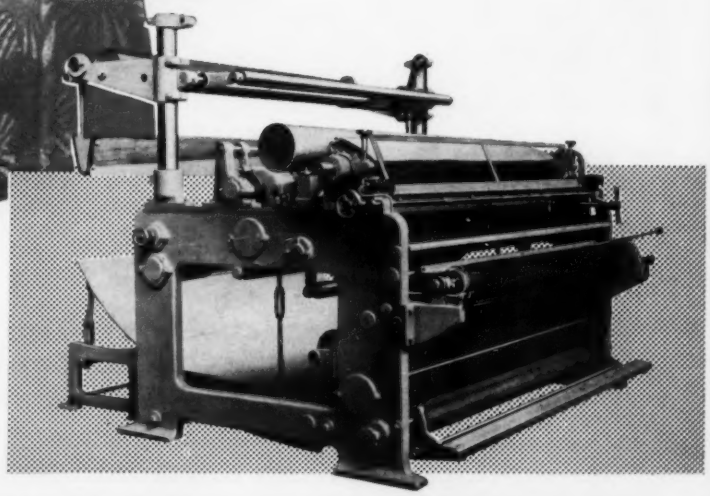
Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

100 years

HIGH PERFORMANCE SHEARING MACHINES

High Performance Shearing Machines (Model CA3) for special finishing of Wool, Terry Cloth and Corduroy, Silk, Velvet, Drapery Fabrics and Plush.



Manufacturing Program:

DEPT. 1
Finishing Machines for Woolens, Cotton, Cellulose Wool, etc.

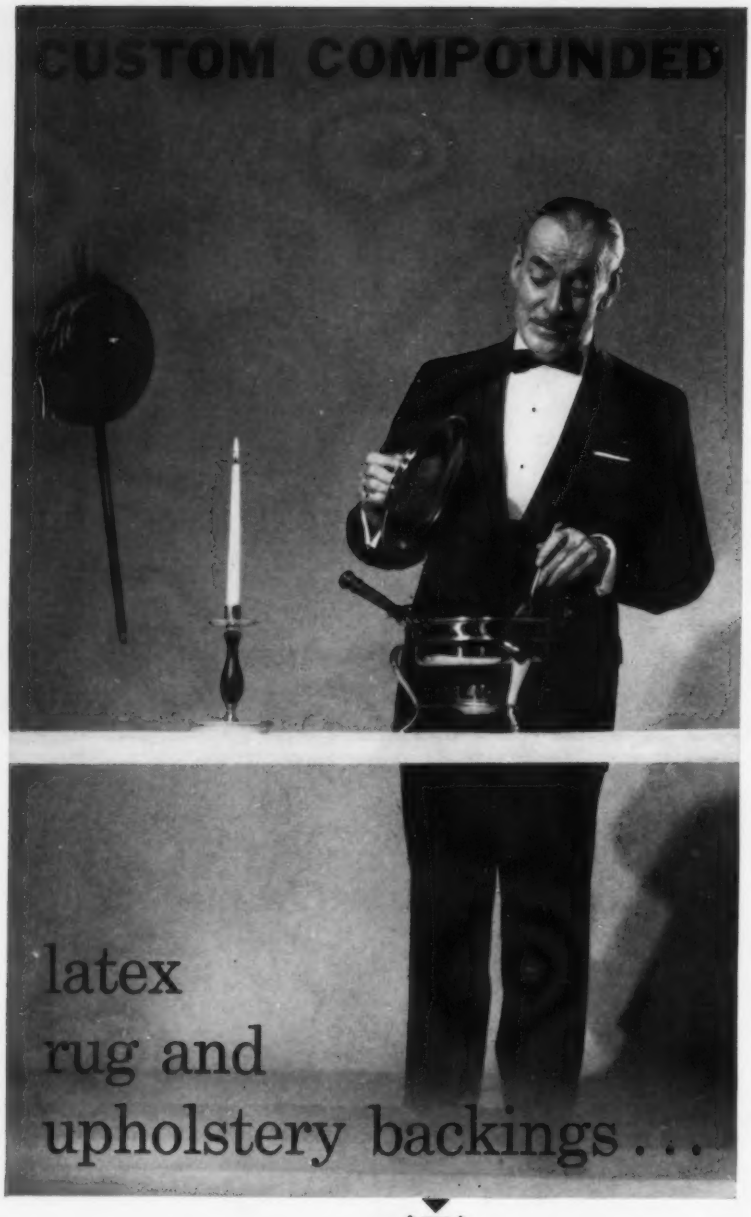
DEPT. 2
Cutting & Finishing Machines for Corduroy, Velveteen, Suedes.

DEPT. 3
Weaving Preparatory Machines, High-Speed Cone Winder, Yarn Singeing Machines, High-Speed Warping Machines.

FRANZ MUELLER · MASCHINENFABRIK · M. GLADBACH (Rheinl.)

North America:
Textile Machinery Import Co., Inc.
277 North Avenue,
New Rochelle, N. Y.

Southern States:
Parrot & Ballentine,
510 South Carolina
National Bank Building,
Greenville, S. C.



All General Latex natural and synthetic latex compounds are blended to perfection . . . to meet your most discriminating requirements. **Let us have your inquiry.**

GENERAL LATEX AND CHEMICAL CORPORATION

666 Main Street, Cambridge 39, Mass.

importers and compounders

General Latex and Chemical Corporation (of Ohio) Ashland, Ohio
General Latex and Chemical Corporation (of Ga.) 1206 Lamar Street, Dalton, Georgia
General Latex & Chemicals (Canada) Ltd. 425 River Street, Verdun, Montreal, Canada

representatives in principal cities—exclusive agents for sale in U.S.A. of Harrisons & Crosfield Malayan Latex—sales agent in U.S.A. for Goodyear's PLIOLITE Latices

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 26)

partment replacing Norman Young who was appointed assistant superintendent of the bleachery.

Recently named officer in charge of the U. S. Agricultural Marketing Service's cotton classing office in Atlanta, Ga., is **Emmett C. Hanson** of Augusta, who succeeds Ben V. Person, recently transferred to the Department of Agriculture Board of Supervising Cotton Examiners in Memphis, Tenn. In his new position Mr. Hanson will be in charge of classing and officially certifying cotton from approximately 60 per cent of the cotton farming area in Georgia.

George P. Paine has been appointed to the new post of executive secretary and assistant treasurer of the American Association of Textile

Mr. Paine

Chemists and Colorists. He will actively assume office in the fall of 1956. At present he is assistant secretary and director of public relations of the American Standards Association.

At Erwin Mills, Inc., Cooleemee, N. C., the post of recreation director has been filled by **Luther King, Jr.,** replacing Dick Pierce who resigned to accept a similar position with the Valdese (N.C.) Community Center.

Otto King has been named personnel manager of the Eno plant of Cone Mills Corp., Hillsboro, N. C.

Berkshire Knitting Mills, Inc., Reading, Pa., has announced the resignation of **Edmund L. Lauber,** general manager of the No-Mend and Christian Dior divisions.

Chauncey W. Lever of Anderson, S. C., director of public relations for Abney Mills and Erwin Mills, Inc.,

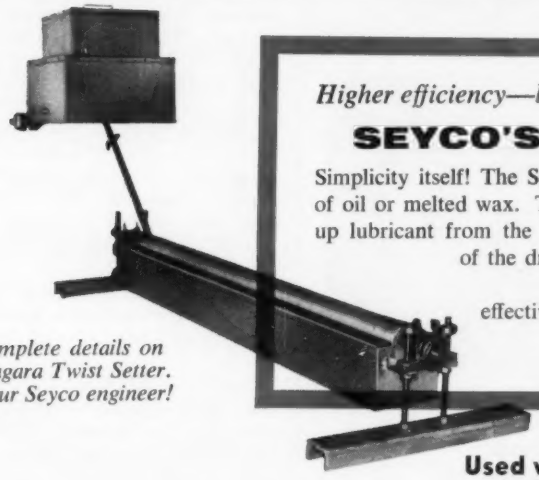
PROVED:

Higher production
More efficiency

Cuts conditioning costs!

NIAGARA TWIST SETTER

Installations in leading mills throughout U.S., *a proven design, no moving parts,* delivers highest production of any yarn conditioner in smallest floor space. Conditions yarn at a new low cost. Ten to twenty cents per thousand pounds of yarn. Low maintenance costs. Production up to 3,000 pounds per hour.



Higher efficiency—better cloth from

SEYCO'S WARP LUBRICATOR

Simplicity itself! The Seyco Warp lubricator roll turns in a trough of oil or melted wax. The warp sheet passes over the roll, picking up lubricant from the roll. The lubricant is then on the surface of the dried size film, which already contains all the softeners and plasticizers needed for an effective size. Warp lubricant goes where it is most needed . . . *on the outside of your yarn.*

Get complete details on the Niagara Twist Setter. Call your Seyco engineer!

Used with Seyco SYNCOTE S and other Seyco warp lubricants

BE SURE AND DROP BY BOOTH 238 AT THE GREENVILLE SHOW

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 Rice Street, Atlanta, Georgia

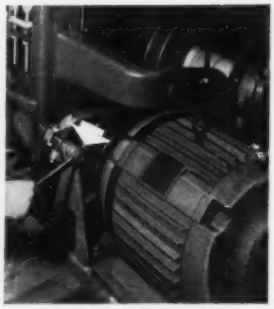
SEYCO

Increase spinning efficiency and frame flexibility

REEVES Vari-Spin Drive

Fast, easy adjustment!

For *exact* cylinder speed regulation—from 500 to 1450 rpm—simply turn shifting screw with wrench . . . *with frame in operation!* Get the required speed—in seconds!



Top production

Optimum spinning efficiency demands the highest front roll rpm that will maintain acceptable yarn quality (ends down) and constant work loads (sides per spinner.) REEVES Vari-Spin permits speed adjustments —while the frame is running—to compensate for variations in humidity and roving quality.

Durable, flexible performance

Maximum frame utility requires drive flexibility for today's yarn count and fiber blend changes, as well as future traveler and ring improvements. With almost 3 to 1 speed range, the rugged and reliable REEVES Vari-Spin permanently reduces wasted fixer hours and frame down time.

Get the story on "Mill Proved" Vari-Spin from your REEVES representative, or write for folder T22b-G561

REEVES PULLEY COMPANY
Division of **RELIANCE** ELECTRIC AND ENGINEERING CO.
Columbus, Indiana

Personal NOTES ABOUT MEN YOU KNOW

has been named by the American Public Relations Association to serve as chairman of "Operation Southland," a function designed to encourage the development of public relations departments in industries, banks, and businesses in the South.

Henry F. Hermann, a former president of the AATCC and a director of the Textile Research Institute, has joined the staff of the Vat Dye Institute as executive secretary. Other officers are: **D. C. Newman,** director of the sales, dyes and chemicals division of E. I. du Pont de Nemours & Co., president; **Keith R. J. Horner** of Toms River-Cincinnati Corp, vice-president; and **H. J. Daigneault,** vice-president of the National Aniline Division, Allied Chemical & Dye Corp., treasurer; **J. R. Bonner,** sales manager of General Dyestuff Corp., chairman of the technical committee; and **J. J. Naylor,** manager, dyes department of American Cyanamid Co., chairman of the promotion committee.

After 65 years of service with Crown Cotton Mills, Dalton, Ga., **T. F. Lochridge,** has retired. At the age of 79, he has spent 50 of the 65 years as supervisor of the weaving departments of No. 1 and No. 2 mills.

G. L. McCartha, general manager of the Greenville (S.C.) division of Riegel Textile Corp., has been elected vice-president and general manager of the glove division. **Russell Parris,** formerly assistant general manager, has been named manager of the Greenville division.

Harold Lyons is the new manager of the Brockton, Mass., branch plant of Shawmut, Inc.

Amerotron Corp., New York, N. Y., has announced the resignation of its executive vice-president, **Burke M. McConnell,** who was also a director of the firm.

Charles Manuel is now manager of the Forstmann Woolen Co., Garfield, N. J., plant.

In a recent election at Bates Manufacturing Co., Lewiston, Maine, president **Frank C. Mawby** was named president of Bates Fabrics, Inc., succeeding George W. Aufderheide, resigned. Mr. Mawby continues

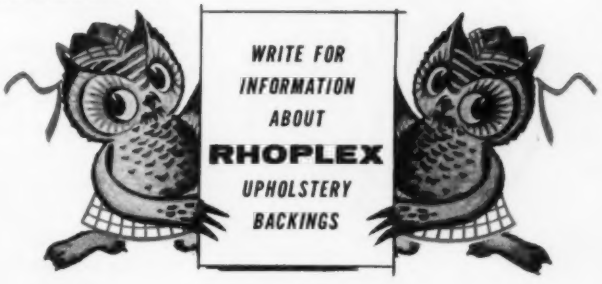
NEW way to improve upholstery backings with **RHOPLEX** acrylic emulsions

Boys will be boys . . . and since you can do little to change them, consider "boy-proofing" your upholstery backings.

New RHOPLEX thermoplastic acrylic resin emulsions give you a new set of answers for your upholstery backing problems. By combining RHOPLEX resins in varying proportions you may obtain any degree of softness or firmness you desire. Yet, unlike rubber, a RHOPLEX film will not discolor or stiffen with age or exposure to light under ordinary conditions.

RHOPLEX films adhere with a vise-like grip to textile fabrics, require no curing, have no odor at all when properly processed. Try this new way to increase the preference for your upholstery materials.

RHOPLEX is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.



Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

REPUTATION

Is Mighty
Important
To The Twenty
Game Winners

One of a baseball pitcher's best stocks in trade is a fearsome reputation among batsmen on the other teams in the league. It's important that he maintain it!

It's also important to choose the electrical contractor with the best reputation to handle electrical projects in your mill. J. M. Clayton Co. has the reputation and the know-how . . . you'll hear the name mentioned wherever quality electrical contracting is being discussed.

J. M. CLAYTON CO. 50 YEARS 1906 1956

J. M. CLAYTON CO.

CONTRACTING ELECTRICAL ENGINEERS

ATLANTA, GEORGIA

Personal NOTES ABOUT MEN YOU KNOW

as chairman of Bates Fabrics. Two new directors elected by Bates Fabrics are **George F. Wiemann,** secretary of Bates, and **Philip Bernstein,** vice-president of Bates Industries, southern subsidiary.

Named vice-president in charge of production of the Star, N. C., Russell hosiery Mills, Inc., is **W. E. Mitchell,** previously vice-president of Melrose Hosiery Mills, Inc., High Point, N. C.

Opp (Ala.) Cotton Mills announce the promotion of **Carlos White** to spinning overseer at the Opp Mill. Mr. White had previously operated the testing lab, and had worked in the cost department.

New officers of the Georgia Section of the American Society for Quality Control are: chairman, **James K. Kinkead,** Dundee Mills, Griffin; vice-chairman, **Byron Griffin,** West Point Mfg. Co.; treasurer, **Donald S. Holmes,** Ga. Tech Engineering Experiment Station, Atlanta; and secretary, **Vernon Hassett,** Martha Mills, Thomaston. New officers of the Atlanta Group, ASQC, are: chairman, **Donald S. Holmes;** vice-chairman, **Harry O. Fewox,** Southern Bell Telephone & Telegraph Co., Atlanta; and secretary and treasurer, **E. G. Field,** E. G. Field & Associates, Atlanta.

John Jungkind, a member of the National Cotton Council's public relations staff in Memphis since 1953, has been appointed Washington public relations representative. Emmett Robinson fills the Memphis vacancy. * * * **Fisher A. Rhymes** has been transferred from the industrial products section of the Memphis sales promotion division to the Council's New York office, where he will be active in a sales training program for the promotion of apparel and household products.

Malcolm J. Rogers has been elected president of the New York Cotton Exchange; **William K. Love, Jr.,** of Anderson, Clayton & Fleming, vice-president; and **John M. Williams,** of Royce & Co., was re-elected treasurer. * * * Newly-elected treasurer of the Wool Associates of the New York Cotton Exchange, Inc., is **Bruce S. Lachlan, Jr.** Elected to the board of

(Continued on page 40)

for successful dyeing of acrilan-wool blends by a one-bath method ..... DECOMINE

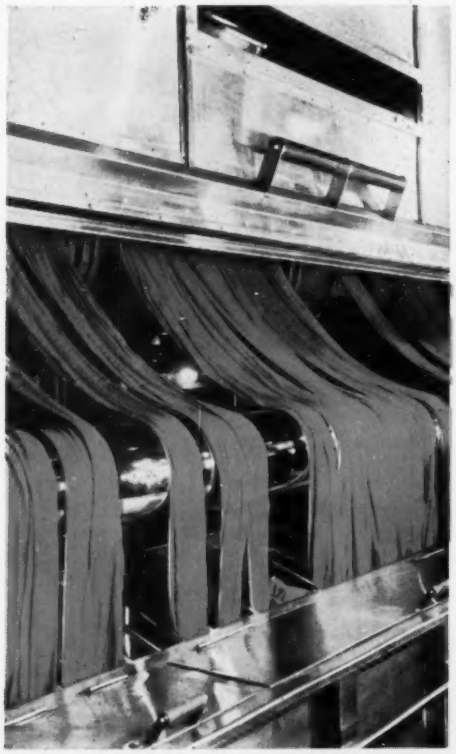


Photo taken at Fair Lawn Finishing Co.,— Courtesy of ELECTROMET REVIEW

The problem of achieving satisfactory union dyeing of Acrilan-wool blends by a one-bath method is solved by DECOMINE, developed by the Arkansas Company for Chemstrand Corporation.

A balanced cationic and non-ionic auxiliary, Decomine produces dyeings of remarkable uniformity and excellent color values.

Acid, metallized acid, metallized neutral, and chrome colors may be successfully used. However, selected colors of these groups should be used for optimum results.

Our technicians are available to assist in developing formulas for your specific needs.

We acknowledge the helpful cooperation of the Chemstrand Corporation in the development of satisfactory dyeing formulas in the application of Decomine.

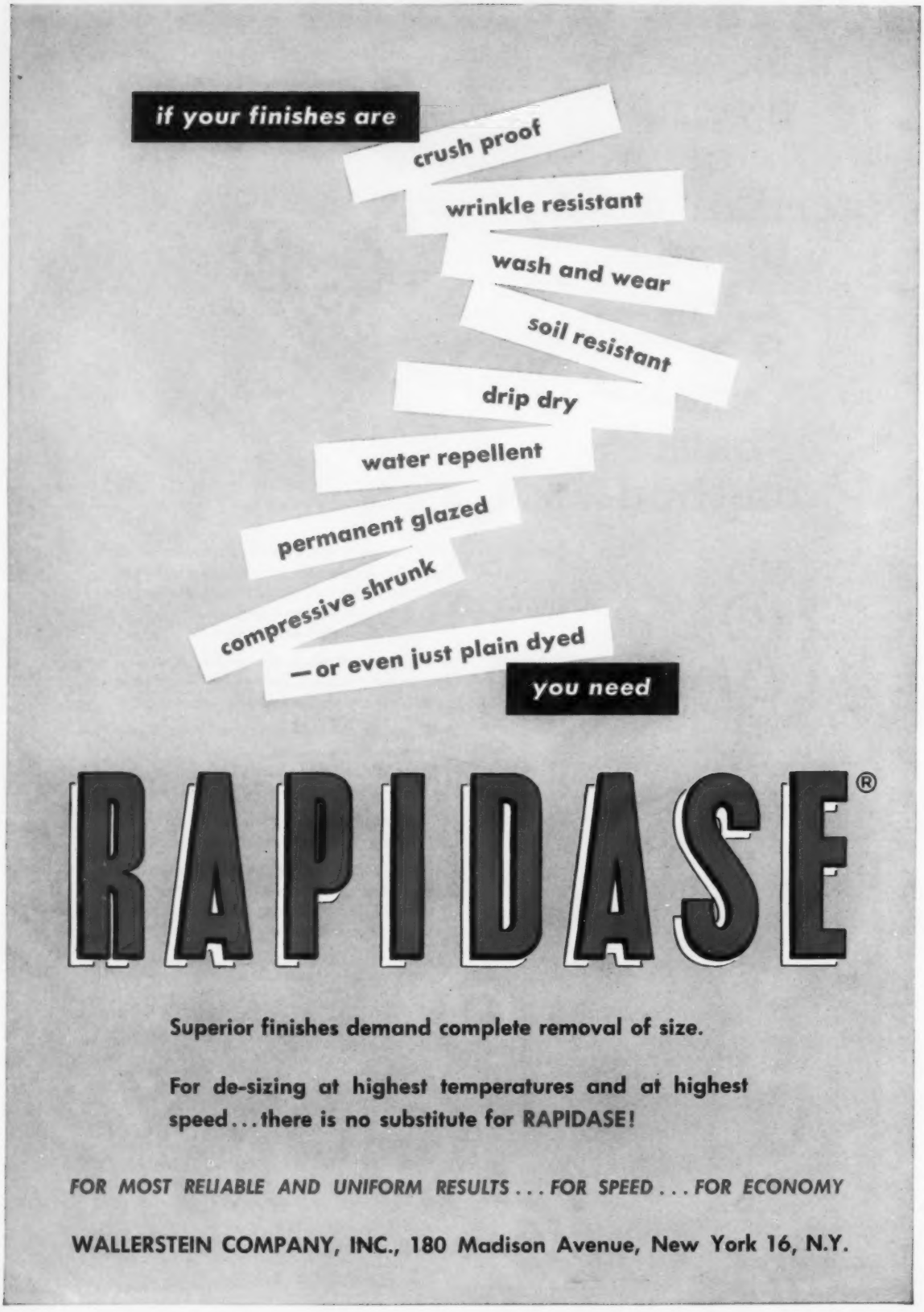
°*Acrilan is the registered trade-mark of the acrilic fiber manufactured by the Chemstrand Corporation.*

AC INC.®

ARKANSAS CO., INC.

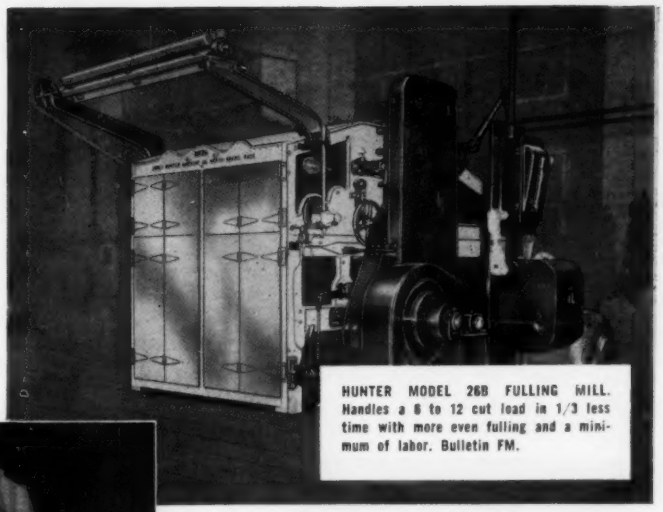
Serving the Textile Industry for over 50 Years

NEWARK, NEW JERSEY

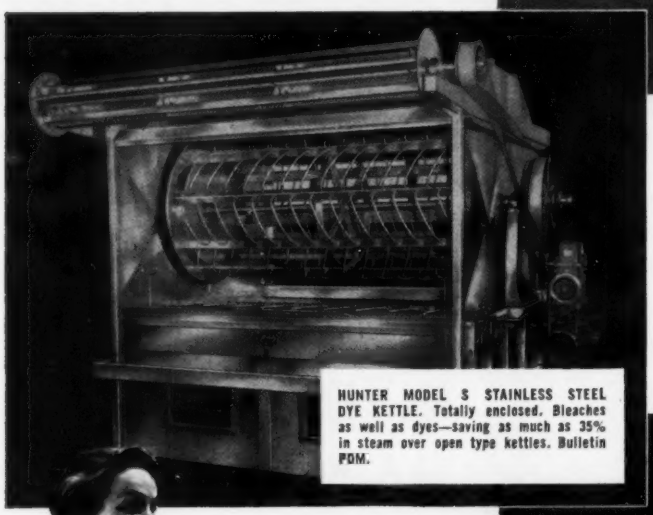

if your finishes are
crush proof
wrinkle resistant
wash and wear
soil resistant
drip dry
water repellent
permanent glazed
compressive shrunk
—or even just plain dyed
you need
RAPIDASE®
Superior finishes demand complete removal of size.
For de-sizing at highest temperatures and at highest speed...there is no substitute for RAPIDASE!
FOR MOST RELIABLE AND UNIFORM RESULTS . . . FOR SPEED . . . FOR ECONOMY
WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N.Y.

HUNTER

Wet Finishing Equipment Is Big In The Profit Picture At LEBANON MILLS



HUNTER MODEL 26B FULLING MILL. Handles a 6 to 12 cut load in 1/3 less time with more even fulling and a minimum of labor. Bulletin FM.

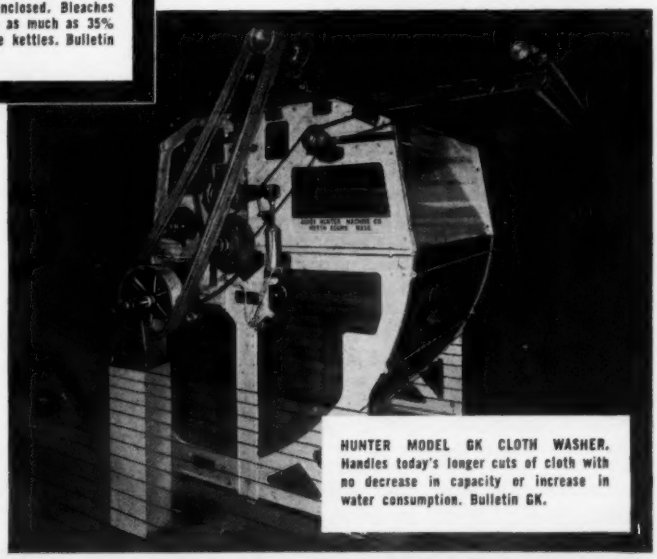


HUNTER MODEL S STAINLESS STEEL DYE KETTLE. Totally enclosed. Bleaches as well as dyes—saving as much as 35% in steam over open type ketties. Bulletin PDM.

For Wool, Cotton, Blends And ALL Synthetics...

Hunter Wet Finishing Machines, at Lebanon and leading mills everywhere, are proving their importance in the modern textile plant's economy. Counterbalancing mounting labor and materials costs, their speed, efficiency and quality output actually make bigger profit margins possible.

HUNTER IS IN THE PROFIT PICTURE WITH A COMPLETE LINE OF DRYING AND FINISHING EQUIPMENT FOR *EVERY* FABRIC REQUIREMENT!



HUNTER MODEL GK CLOTH WASHER. Handles today's longer cuts of cloth with no decrease in capacity or increase in water consumption. Bulletin GK.

JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ...IT'S DEPENDABLE

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair ... rapid parts delivery

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 36)

governors were **Harry B. Anderson, James J. Caires, James H. Stannard** and **Gilbert C. Wright.** All other officers and members of the board were re-elected.

Robert T. Stevens, former secretary of the Army and presently president of J. P. Stevens & Company, Inc., New York, is congratulated by **Bertrand W. Hayward,** president of the Philadelphia Textile Institute,

Mr. Stevens and Mr. Hayward

upon his receipt of the honorary degree of Doctor of Textiles at graduation exercises of the Institute. * * * **Ernest Folger, Jr.,** assistant secretary of J. P. Stevens & Co., Inc., has assumed the responsibilities of administration of the offices of both groups No. 1 and No. 2 of the cotton and spun fibers division. **H. B. Croxton** has joined the comptroller's staff as head of the Greenville data processing center and assumed the responsibility of all accounting and related functions for groups No. 1 and No. 2 of the cotton and spun fibers division.

James H. Lineberger, Knit Products Corp., Belmont, N. C., president and board chairman, and chairman of the N. C. Textile Foundation, was awarded an honorary degree of Doctor of Humanities by the School of Textiles of North Carolina State College.

New manager of Shawmut, Inc., knitwear firm of Stoughton, Mass., is **Harold (Ben) Lyons.** He takes over the duties of J. L. Wyner, of Vanta Co., Brockton, Mass., who is active in the production of Shawmut, the parent company.

Edward C. Lafferty, agent of Greeville (N. H.) Mills, has resigned to become sales representative of Milligan and Higgins, manufacturers of gelatins and glues.

Edwin L. Lyon has resigned as general manager of the Hoskins plant of Spatex Corporation of Charlotte, N. C. His duties have been temporarily assumed by D. A. Jordan, president and treasurer.

New resident manager of S. Stroock & Co., Inc., Newburgh, N. Y., is former assistant secretary-treasurer **Daniel J. Leo** who succeeds Cornelius A. Callahan, resigned. Mr. Leo has also been named to the board of directors.

Leo Landry, manager of Champlain Mills, Inc., of Winooski, Vt., has resigned.

Peacock Textiles, Inc., a new Goldsboro, N. C., organization which will engage in the manufacture of cotton mop yarn from spinning mill wastes,

LOOK . . . for them at the
SAVE ON INVESTMENT & MAINTENANCE
NEW BRAKE
Note its Sturdy Construction
HARTFORD
Pre-Lubricated Ball-Bearing
SPINDLES
for Twisting & Spinning
RUN an estimated 5 YEARS with NO LUBRICATION
Positive Cam Action
Positive Lock
HARTFORD MACHINE SCREW COMPANY
DIVISION OF STANDARD SCREW CO.
HARTFORD 2, CONN.
SOUTHERN DIVISION, ROUTE 3, BOX 314, GREENVILLE, S. C.

has named **W. A. J. (Bill) Peacock** president and treasurer of the firm. He was formerly vice-president of Borden Manufacturing Co. in Goldsboro, N. C.

The Schwarzenbach-Huber Co., New York, N. Y., textile weavers, has announced several changes in its board of directors and officers: **Alfred Schwarzenbach,** due to his decision to make his permanent home in Switzerland, declined re-election as chairman of the board and as director; **George Whitefield Betts, Jr.,** who had served on the board and had acted as secretary and general counsel, has resigned for reasons of health. **Otto Froelicher** has been elected as chairman of the board and secretary, in addition to his executive position as treasurer. Robert Zoelly, formerly vice-president in charge of production, has been replaced by **Kurt O. Trueb.**

William E. Shann is now research engineer at Southwell Combing Co., North Chelmsford, Mass. He was formerly assistant director of engineering research at Pacific Mills, Lawrence, Mass.

Paul Shoffner, manager and secretary of Hy-Way Arts, Inc., Calhoun, Ga., has been named as assistant to Henry C. Ball, executive vice-president of the Tufted Textile Manufacturers Association.

J. N. Jones, formerly overseer of spinning at Alma Mills, Gaffney, S. C., is now carding and spinning overseer at Jewel Mills division of Botany Cottons, Thomasville, N. C.

Officers elected to head the new combine of dyers, General Textile Processors, are: **Dean M. Lewis,** Colonial Piece Dye Works, North Bergen, N. J., president; **Arthur Nazzaro,** American Textile Printers, executive vice-president; **Samuel Koenig,** Capital Piece Dye Works, Garnersville, N. Y., treasurer; **Dan Nazzarro,** American Textile Printers, secretary; **Murray L. White,** Ardsley Dye & Finishing Co., Inc., first vice-president; **Alexander F. Guffy,** Forrest Piece Dye Works, Inc., Easton, Pa., second vice-president; and **William I. Shenker,** Duchess Dyeing Co., third vice-president.

John W. McGovern has been elected executive vice-president of United States Rubber Co., succeeding retiring **H. Gordon Smith** who will continue as a member of the board of directors.

Richard H. Swallow, Bristol, Va., has been named plant manager of the new Bigelow-Sanford Carpet Co., Inc. subsidiary, Belton (S.C.) Yarn Mill.

OBITUARIES

Mrs. Laura Page Adams, 72, retired president of the former Ruby Cotton Mills, Gastonia, N. C.

Charles Wilkes Babb, Sr., 93, treasurer of the Knox Woolen Co., Camden, Maine.

Elmer C. Bertolet, Sr., 68, chairman emeritus of the Philadelphia Section, AATCC.

Marion Brawley, 74, retired executive of F. W. Poe Mfg. Co., Greenville, S. C.

Charles S. Bromley, Jr., 50, president of Quaker Lace Co., Philadelphia, Pa.

J. H. "Chris" Canady, Products Sales, Inc., Montgomery, Ala.

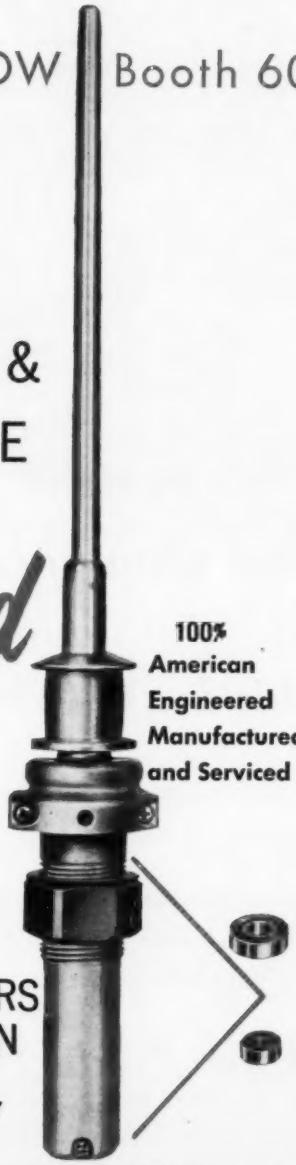
Joseph Carlino, 57, President, Botany Finishing Co., Passaic, N. J.

Calvin Lafayette Chandler, 80, re-

(Continued on page 46)

GREENVILLE SHOW Booth 602

SAVE ON INVESTMENT & MAINTENANCE



Hartford

100% American Engineered Manufactured and Serviced

Pre-Lubricated Ball-Bearing FILLING SPINDLES

RUN an estimated 5 YEARS with NO LUBRICATION

HARTFORD MACHINE SCREW COMPANY
DIVISION OF STANDARD SCREW CO.
HARTFORD 2, CONN.

SOUTHERN DIVISION, ROUTE 3, BOX 314, GREENVILLE, S. C.

Everybody's talking about them... the wonderful "wash-and-wear" fabrics made possible by **HARTOSET-E**

If you have already tried other resins and discovered their disadvantages, it's time you tested HARTOSET-E.

This new type thermosetting resin has been commercially proven in "wash-and-wear" finishes. Allow us to arrange a plant demonstration for you.

HART PRODUCTS

the Hart Products Corporation

1440 Broadway • New York 18, N. Y.
Works and Laboratories: Jersey City, N. J.
Hart Products Company of Canada, Ltd., Guelph, Ontario

SAVE IN PRODUCT HANDLING...

Gaylord Boxes

Want to cut your costs of in-plant handling, warehousing or loading? Here are two ways that Gaylord containers can help you do the job:

Speed up! Sturdy, resilient Gaylord boxes are engineered to stand up under fast handling by modern, high-speed equipment.

Save space! Precision-made Gaylord containers are dimensionally "true." They stand straight and solid...even when stacked high.

For containers to promote profit-saving product handling in your plant, call your nearby Gaylord sales office today.

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION ★ ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

FIBER-LOK resin emulsions for textiles

FIBER-LOK emulsions are new vinyls formulated especially for textile applications—from sizing and finishing to nonwoven fabrics.

FIBER-LOK emulsions find use with all types of fibers and fabrics including blends of natural and synthetic. They impart a soft full hand or a crisp stiff finish. They increase tensile strength, abrasion resistance and wash fastness. Some withstand sterilization without discoloring.

FIBER-LOK emulsions are simple to use. Compatible with other sizing and finishing materials. They vary in particle size, emulsifier type and other physical characteristics. Why not let one of National's Resyn Specialists help you decide which can improve your fabrics.

RESYNS® National STARCHES

National Starch Products Inc., 270 Madison Avenue., New York 16, N. Y. • Atlanta • Boston • Philadelphia
In Canada: National Adhesives (Canada) Ltd., Montreal

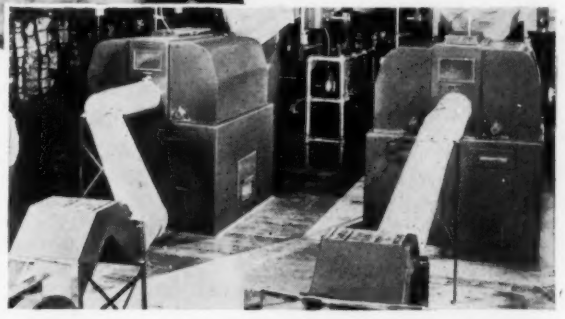
CALLED "THE MOST IMPORTANT DEVELOPMENT IN OPENING AND CLEANING IN TWENTY YEARS"

The new WHITIN AXI-FEED and AXI-FLO

High speed photograph of interior of Whitin AXI-FLO showing cotton in process of being cleaned, further opened and blended. Note small size of tufts passing out through delivery pipe at rear.

are fast making conventional opening and cleaning methods obsolete!

Mill installation of two AXI-FLO units. Each is fed by a line of blending feeders.



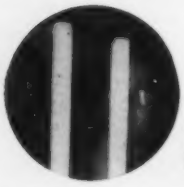
Providing a new technique in opening and cleaning, installations of the Whitin AXI-FEED attachment for blending feeders and the Whitin AXI-FLO are now setting performance standards higher than were ever possible with conventional equipment. In addition to Opening Room benefits, many other advantages are being realized in subsequent processes because of the improved quality of the cleaned stock.

- Better Opening
  Stock opened into very small tufts
- Increased Cleaning
  Dirt removed equivalent to 2 or more conventional machines. Production up to 1800 lbs./hr.
- Additional Blending
  Unmatched blending: cotton — synthetics
- Yarn and cloth quality usually improved
  Preservation of long fibers beneficial
  Neps greatly reduced
- Costs Sharply Reduced
  Present power costs reduced by 60-75%
  Lower maintenance costs
  Low investment required

Send for full details today!

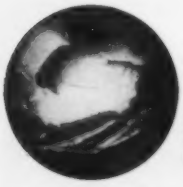
Whitin
MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS
CHARLOTTE, N. C. • ATLANTA, GA.
SPARTANBURG, S. C. • DEXTER, ME.

Ask these questions, too, when you judge a fluorescent lamp...



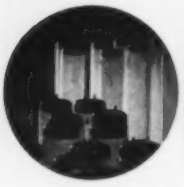
Is your investment protected?

Check Westinghouse Fluorescent Lamps against any other brands you are now using. Check them for maintained brightness, long life, uniform appearance. If you are not entirely satisfied on all counts, your full purchase price will be refunded.



Is it built for good "lumen maintenance"?

Made exclusively with deterioration-resistant Halo Phosphors, Westinghouse fluorescent lamps *maintain* high light output to the end of their long lives.



Is it the correct type, size and color for the lighting job to be done?

In the Westinghouse fluorescent family of 290 different lamps—including Slimline and Rapid Start—there's a type and size precisely right for every office, plant and merchandising application. Colors include seven different shades of "white" alone.

For the full story on how to get more for your money in fluorescent light, contact your Westinghouse Lamp Representative.

WATCH WESTINGHOUSE

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

Personal NOTES ABOUT MEN YOU KNOW

OBITUARIES

(Continued from page 41)

tired vice-president and general-manager of Jackson Mills, Wellford, Iva, and High Shoals, S. C.

Arthur Mills Dixon, 74, retired president of Trenton Cotton Mills, Gastonia, N. C.

David C. Forsht, president of Belle Chemical Co., Reading, Pa.

Llewellyn P. Haden, 41, president of Charlottesville (Va.) Woolen Mills, Inc.

J. Lee Keiger, Sr., 57, board chairman of Indera Mills Co., Winston-Salem, N. C.

Jake B. Kennington, Sr., owner of Textile Apron Co., of LaGrange and East Point, Ga.

Albert Kluge, 64, president and owner of the Artistic Weaving Co., Pompton Lakes, N. J.

William Lewis, 67, retired faculty member of the Rhode Island School of Design's Textile Division, Providence, R. I.

Charles Morton, 76, retired executive of the former J. P. Coates, Inc. Pawtucket, R. I.

Morris M. Silver, founder and president of Girard Knitting Mills, Philadelphia, Pa., and executive of Phoenix Knitting Mills, Brooklyn, N. Y.

Amidas A. Whitener, 82, president and treasurer of Rhodes-Whitener Mill, Taylorsville, N. C.

Louis A. Whitener, 54, member of the board of directors of Rhodes-Whitener Mill, Taylorsville, N. C.

John Gilliam Wood, 71, president of Edenton (N.C.) Cotton Mills.

Charles W. Yenny, founder of Rayon Processing and Warp Sizing Co., Paterson, N. J.

Charles H. Zensen, owner of J. G. Zensen & Co., Philadelphia, Pa.

What the TEXTILE MILLS are doing

Abbot Worsted Co., Forge Village, Mass., has merged with Hubbard & Co., Pittsburgh, Pa., hardware manufacturer. Abbot will operate as a division of Hubbard.

The first edition of "Stitchings," the new house organ of **American Thread Co.,** has been published. This paper is devoted to news of the employees in the various plants, and to general company news.

An experimental hosiery manufacturing and testing operation, **Arcady Hosiery Mills,** now has fifty 400-needle seamless machines in production at 508 W. 5th St., Charlotte, N. C., under the management of A. C Gregg.

Blair Mills, Belton, S. C., is engaged in changing from raw stock dyeing to package dyeing in a $50,000 modernization project which also involves the addition of 3300 sq ft of floor space. Part of the added space is needed for the new dyeing equipment; the balance will be used for storage.

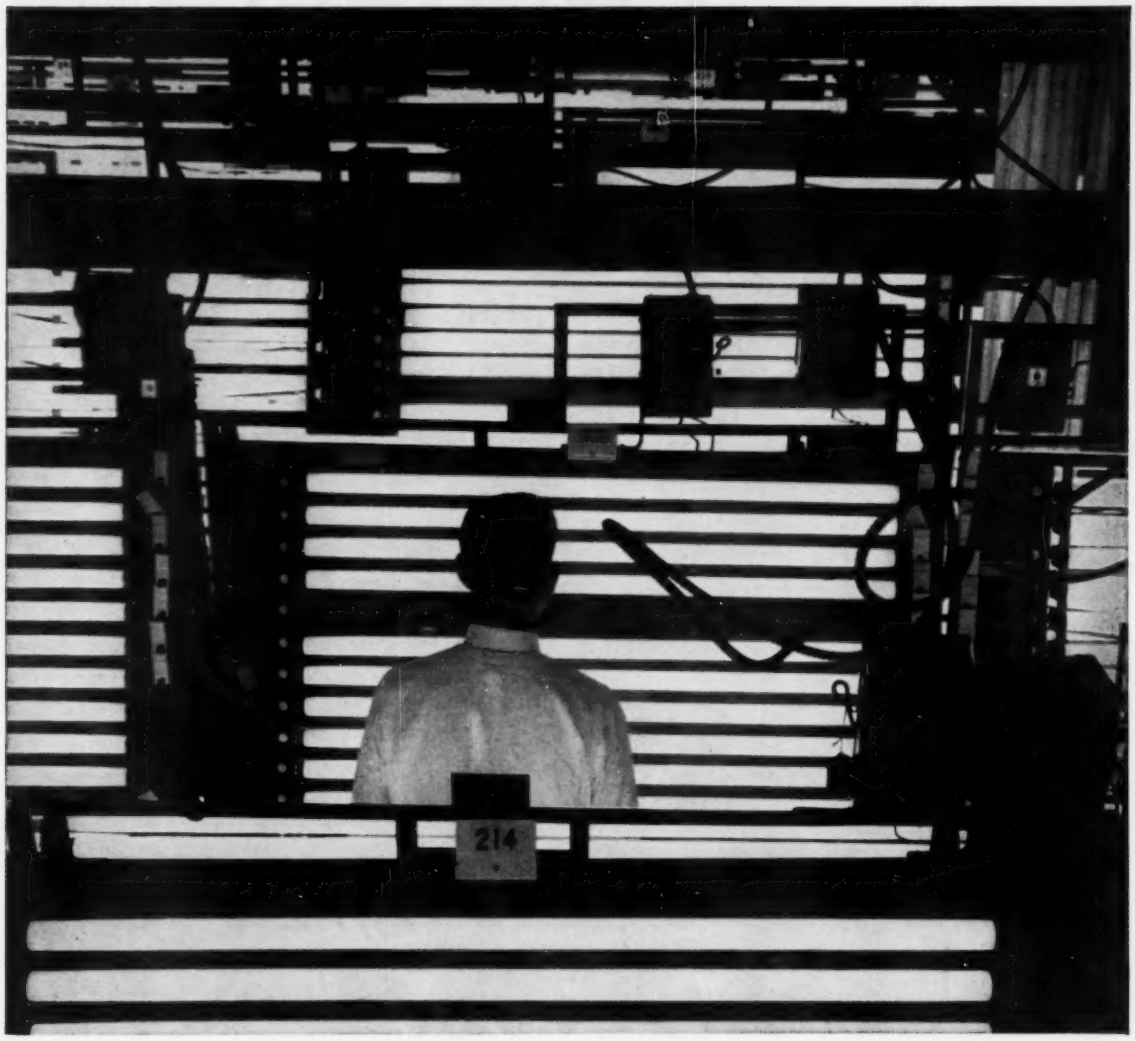
With the donation in the past twelve months of approximately $250,000 in support of higher education, **Burlington Industries Foundation,** Greensboro, N. C., has contributed nearly $2,000,000 to that cause since the Foundation was established ten years ago. Now there are 15 schools receiving scholarships which are awarded at the school level without influence from Burlington. They are: Washington & Lee; Davidson; Duke; Wake Forest; Lowell Textile Institute; Philadelphia Textile Institute; Clemson; Georgia Tech; Virginia Polytechnic Institute; the Universities of North and South Carolina, Tennessee, and Virginia; N. C. State and A. & T. College.

Carolina Process Co., Charlotte, N. C., has ceased operations and is offering its equipment and real estate for sale. Refusal of the city to permit use of disposal facilities for the waste water, unprofitable operations of the last three years, and tightening of credit money, were given as reasons for the closing by R. C. Anderson, president and treasurer.

Chatham Mfg. Co., Elkin, N. C., has liberalized its vacation policy by granting a third week to employees with 20 or more years of service. The practice of allowing one week of

(Continued on page 50)

how to judge a fluorescent lamp . . . point no. 7



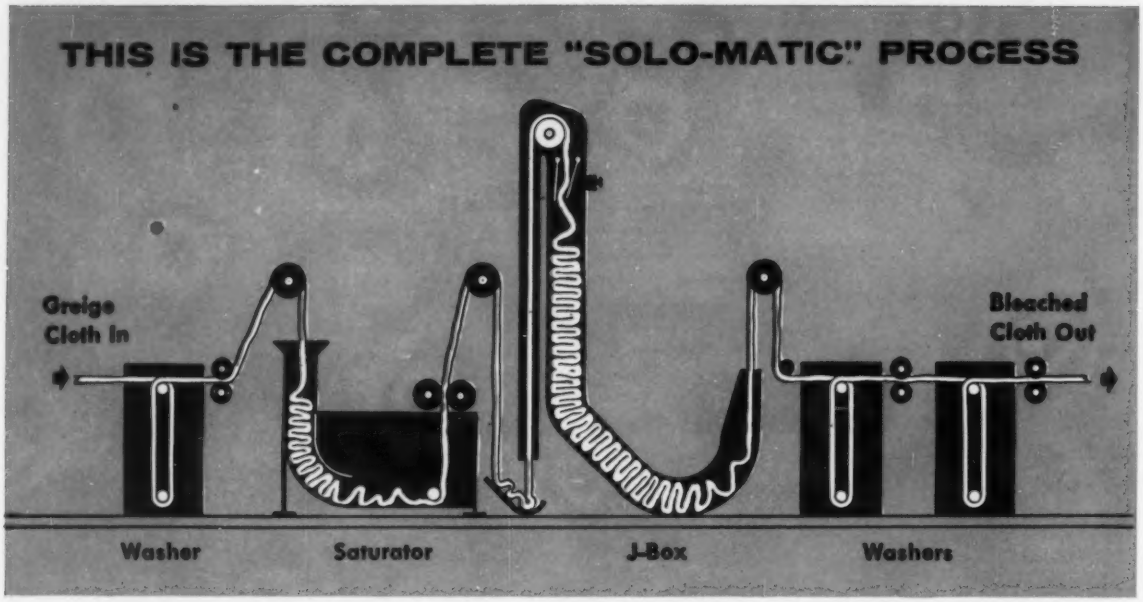
ask about **QUALITY CONTROL**

You would never guess it from their price, but fluorescent lamps today are *precision* products. (In Westinghouse fluorescent lamps, for example, you'll find mercury measured with the precision of a doctor's prescription, electrodes wound with fine-watch accuracy.) Thus only the closest quality control can give you the high light output, the long life, the good color qualities you expect from every single lamp you buy. Westinghouse quality control includes *480 inspections and tests* for every lamp produced.

WATCH WESTINGHOUSE

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

Du Pont announces



YOUR "SOLO-MATIC" SERVICE TEAM

R. P. S. Black
WILMINGTON, DEL.
OLympia 4-5121

L. W. Blight
PORTLAND, ORE.
CApitol 7-1281

J. D. Egan
WILMINGTON, DEL.
OLympia 4-5121

M. K. Gruetzner
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new "SOLO-MATIC" Bleaching Program

to improve quality and reduce cost

PART I—NEW DU PONT SINGLE-STAGE BLEACHING SYSTEM

Equals multi-stage bleaching effectiveness with 50% less equipment—50% less floor space.

Du Pont's new one-step continuous bleaching process offers mills now operating multi-stage processes these advantages:

—Higher quality, more uniform bleaching of cotton woven goods with half the usual equipment—half the usual floor space; or, *doubled production* from present equipment.

—A more efficient process . . . savings up to 50% in operating costs.

—Reduced over-all bleaching costs with savings up to 20%.

—Greater flexibility—each stage of a multi-stage system can be turned into a complete unit . . . each bleaching a different cloth at maximum efficiency.

PART II—NEW DU PONT J-BOX

Improved quality—fewer moving parts. The simplified construction of this J-Box keeps cloth distortion and abrasion at a minimum. More uniform bleaching—higher, more uniform heat and chemicals used at their maximum efficiency. More economical installations—installation, construction and maintenance costs are far lower.

PART III—NEW DU PONT COMPREHENSIVE SERVICE

At your request, your Du Pont "Solo-Matic" Service Team is ready to make a complete survey of your operation . . . make detailed, confidential recommendations based on these findings . . . outlining the most economical means of utilizing your present equipment as the basis for the new "Solo-Matic" Process in your plant.

* * *

To have a Du Pont Representative show you the "Executive Summary," which tells how this step-by-step program works and can be adapted to your requirements, just send the coupon below.

DU PONT

PEROXIDES

ALBONE® hydrogen peroxide, 35% and 50%

PERDOX® sodium borate perhydrate

SOLOZONE® sodium peroxide

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E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, TI-9
Wilmington 98, Delaware

Please have my Representative call with full information on the "Solo-Matic" Bleaching Program.

Name_____ Title_____

Firm_____

Address_____

City_____ Zone_____ State_____

This Is the Year to Paint Your Plant

PRODUCTION BOOM IS COMING: PAINT NOW WHILE THERE'S TIME

You know what happens to plant maintenance when plants are operating at capacity — it just gets "put off." And the longer it's put off, the more costly it is to handle. In fact, if you postpone painting just one year, it can cost you double or triple today's cost!

Important days are just ahead. Prepare for them *now*. Repair and restore masonry surfaces, stop corrosion of iron and steel, improve "seeing conditions" to boost morale and production. And the way to start is to consult America's maintenance coating specialists. Use the *free* plant survey service of Truscon Laboratories, who for nearly fifty years have led the Industry in maintenance know-how.

Keep this in mind. There is no single coating for all maintenance problems. Different surfaces, different conditions require different protective coatings. Here's where you can save money — by using specialized coatings that have greater corrosion resistance, greater weather and wear resistance. As a result, you paint less often. Your Truscon representative will provide prompt plant inspection, color guidance and coatings consultation. No obligation to you. Absolutely. Send coupon now for immediate action.

See our exhibit—19th Southern Textile Exposition, October 1 thru 5 —Booth 325, Textile Hall, Greenville, South Carolina

TRUSCON *Laboratories*

Industrial Maintenance Division of Devoe & Raynolds Co., Inc.

Truscon Laboratories
1700 Caniff, Dept. T-10
Detroit 11, Michigan

☐ Send literature
☐ Have Truscon representative call
Name _____
Firm _____
Address _____
City _____ Zone ____ State _____

What the TEXTILE MILLS are doing

(Continued from page 46)

vacation to employees with one year of service, and two weeks for those with five or more years, will continue.

A recognition gift of $5000 has been made to Converse College by **Clifton (S.C.) Mfg. Co., Inc.,** in honor of the 87.8% participation of Spartanburg County alumnae of Converse College in the 1956 alumnae fund.

Botany Mills, Inc., Passaic, N. J., has acquired Great Lakes Mills, Inc., Janesville, Wis. Included in the transaction was Glenoit Mills, the sales organization of Great Lakes, Mills, Inc. The management and merchandising operations of the two mills will remain unchanged, and will operate as a wholly-owned subsidiary of Botany under the name of Glenoit Mills, Inc. Arnold W. Schmidt, president, Great Lakes Mills, Inc., will remain in charge of production.

Columbia Mills, Inc., Minetto, N. Y., has approved expenditures for the installation of additional cloth dyeing and coating equipment for book cloth at the Minetto plant.

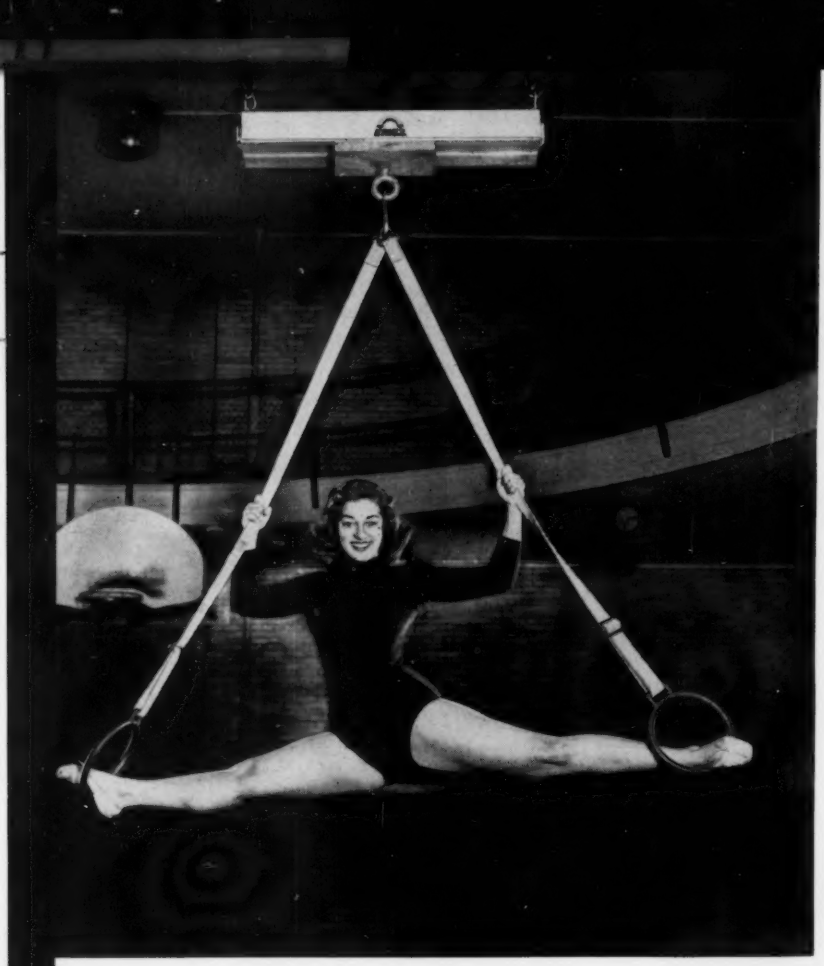
Conover Knitting Co. and **Warlong Glove Mills,** both of Conover, N. C., have merged. According to Adrian Shuford, Jr., an official of the plants, the Conover Knitting Co. will become a unit of Warlong Glove Mills without affecting the operations of the two firms.

Edward Ricci, president, and Leo Goldberg, treasurer, **Duro Finishing Corp.,** Fall River, Mass., recently purchased the buildings of River Mills Corp. and 200,000 sq ft of land.

The employees of **Erwin Mills, Inc.,** plants 2 and 5 at Erwin, N. C., were given a Brunswick stew at noon July 21. Eddie W. Siegler, vice-president and general manager, personally prepared the stew. W. H. Wiley, manager of the mills in Erwin, directed the activities of the day.

A new combine of dyers, **General Textile Processors,** is headed by Dean M. Lewis. Mr. Lewis is president of Colonial Piece and Dye Works, North Bergen, N. J., and also heads the Silk & Rayon Printers & Dyers Association of America. The combine in-

(Continued on page 243)



THE DARING YOUNG GAL ON THE ERIEZ TRAPEZE! Though she swings through the air with the greatest of ease, this pretty aerialist has nothing to worry about. Her rigging is held securely by an Alnico V magnet, hung from the ceiling of the gym. This idea of herculean magnetic power has found widespread acceptance in the textile industry, where permanent-powered magnetic separators are used in processing lines to remove tramp iron which could cause fires, machinery damage and production losses in cotton, woolen, rayon and waste mills. *All Eriez Magnets are non-electric, self-contained. They operate without any wires or attachments. Their magnetic power lasts a lifetime. The first cost is the only cost.*

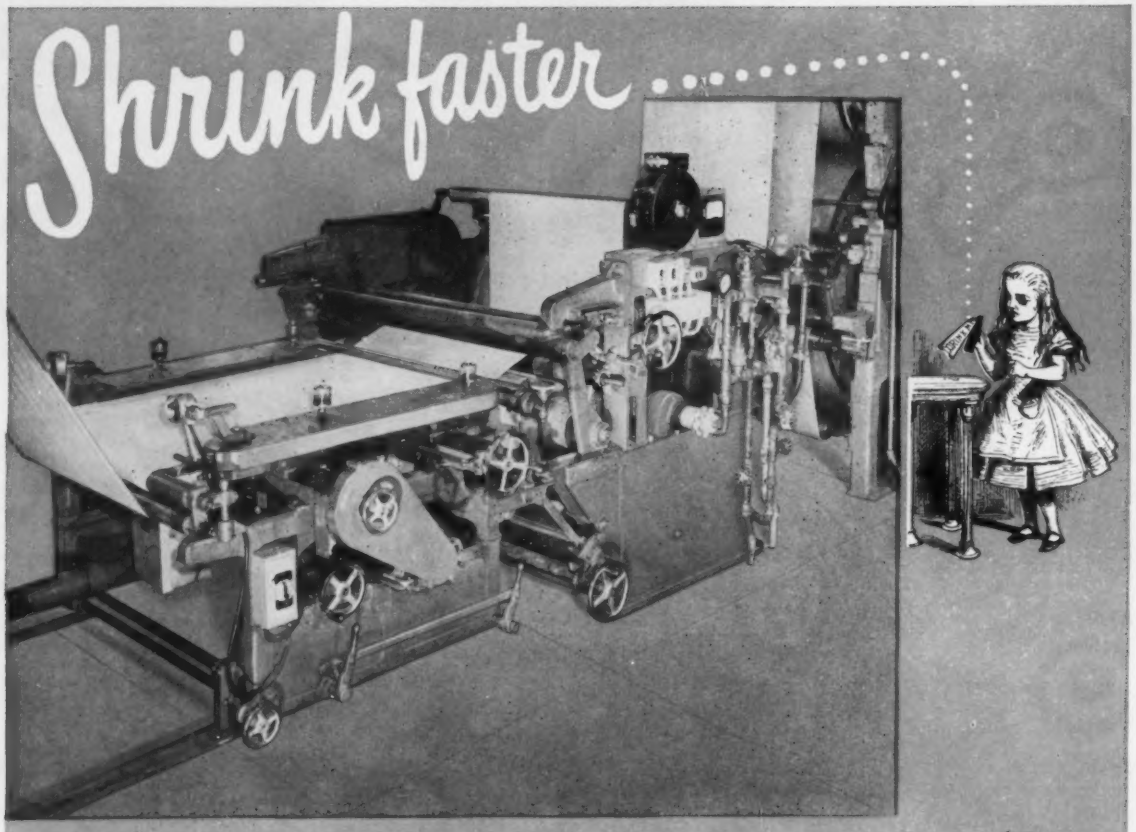
MAGNETIC IDEAS FROM ERIEZ

Eriez' free booklet "Magnetic Ideas" can help you. Send for it without obligation. ERIEZ MANUFACTURING COMPANY. 72J Magnet Drive, Erie, Pa. OR, on your specific request Eriez factory-trained field men backed by Eriez' laboratory and engineering know-how, will be happy to study your particular problem, make a plant survey and offer helpful "Magnetic Ideas".

THE WOEFUL ROLE OF PICKER CALENDER ROLLS. When's the last time you checked your calender rolls? Did they look like those above . . . damaged by pieces of stray metal that left lasting impressions, and also damaged lickerin and card clothing? Chances are, your own equipment has also suffered because of spikes from aprons, ring travelers, nails, screws, bottle tops, etc. But now you can prevent machinery damage, reduce downtime, and eliminate poor card performance with an Eriez HI-POWR Permanent Non-electric Magnet. Why not invite an Eriez representative to look at your equipment? He'll be glad to survey your plant and recommend one of the many Eriez HI-POWR Magnets designed specifically for the textile industry.

ERIEZ HI-POWR MAGNETIC SEPARATORS

PICKERS AND PROCESSING EQUIPMENT POLICED BY HI-POWR PLATE MAGNETS! No danger of stray metal damaging the pickers, card and special processing equipment of the Chicopee Manufacturing Corporation, Ark., producer of more than 250 types of non-woven fabrics. Three Eriez HI-POWR Plate Magnets, each installed just above a spiked apron, are removing approximately one pound a month of wire, nails, bottle caps broken apron spikes and other tramp iron from the raw material which includes absorbent cotton, rayon, nylon and card returns. According to the Chicopee people, the Eriez Magnets have saved approximately $5,000 yearly in machinery damage and loss of production caused by downtime.



to stay competitive . . .

Alice in Wonderland did her shrinking with untried, hit-or-miss methods. In today's high-production high-demand market, you need something a lot more dependable than that. You need faster shrinking . . . smooth hand on high quality fabrics . . . better finish on all fabrics . . . no down-time for blanket or feed roll changes. And you get them all when you add a Butterworth Rubber Blanket unit to your present shrinking range.

You'll get speeds up to 125 YPM on lightweight, low-shrinkage fabrics . . . improved finish on any fabric . . . quick change of styles with down-time eliminated . . . all cloth processed on a single, long-lasting rubber blanket . . . no blanket break-in period . . . no progressive deterioration.

The Butterworth Rubber Blanket Compressive Shrinking Machine permits almost instantaneous control of the amount of shrinkage . . . ends shoe maintenance cost by eliminating shoes . . . and meets Cluett, Peabody shrinkage tolerances for all fabrics.

For details on the improved performance and operating economies of the Butterworth Rubber Blanket Compressive Shrinker, write or phone today. No obligation, of course.

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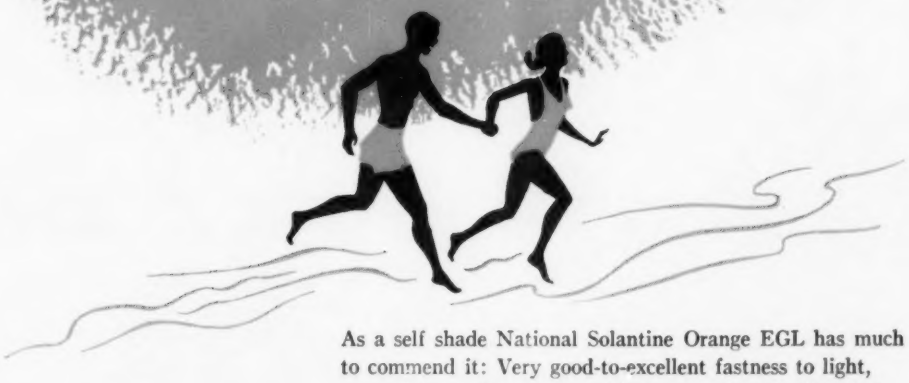
Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Compressive Shrinking, Finishing, Embossing, Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

BUTTERWORTH
Serving the Textile Industry Since 1820

versatile light-fast
non-dusting direct dye

National Solantine® Orange EGL



As a self shade National Solantine Orange EGL has much to commend it: Very good-to-excellent fastness to light, mercerizing, cold water spotting, sea water bleeding, hot pressing and rubbing plus good wash fastness.

As a component in mixtures for tans and browns, National Solantine Orange EGL has the unique property of contributing exceptional light fastness to compound shades while retaining its other desirable properties.

This National Dye is unaffected by metals in the dyebath, may be applied at low temperature, levels well and discharges to an excellent white with neutral discharge paste.

We want you to have a working sample of this National direct dye so you can try it alone or as a component at your first opportunity. Our nearest office will fill your request.

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Boston Providence Charlotte Chicago San Francisco Atlanta
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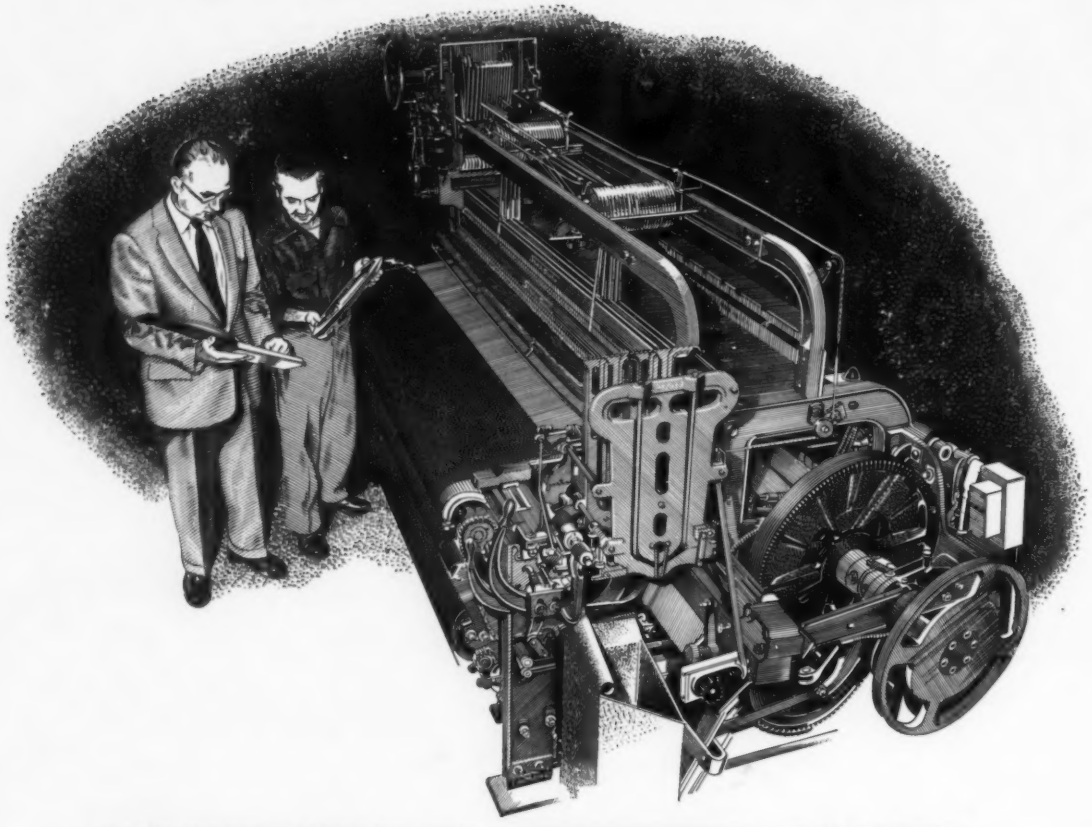

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Our engineers can supply you with a complete line of harness equipment, shuttles and accessories—the best equipment available. Combined with their know-how, there is nothing better to improve your production. Ask for one of our sales engineers today.

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Albert R. Breen, Chicago, Ill., Harrison 7-7140
Textile Supply Co., Dallas, Texas, Riverside 4729

"But, is the color fast?"

She's single-minded about fabric color . . . but *you* needn't be about the *class of dye!* Tops in consumer-demanded fastness is the knitted brown and gold combination shown here. Many fast shades from golden yellow to rich brown are produced with Azoene® Fast Garnet GBCP Salt and Naphthol AS-LG as the basic components.

No one class of dyestuffs has a monopoly on fastness. Azoenes—Fast Color Salts and Bases—often give you the truest, brightest colors obtainable while meeting every fastness requirement of the consumer... every production demand of the dyer.

Investigate Fast Colors for 1) cutting costs without sacrificing fastness; 2) upgrading your line without excessive price increase. Write or call our Spartanburg laboratory for a prompt, unbiased analysis of your dyeing problems.

BLACKMAN-UHLER CO., SPARTANBURG, S. C.
ALLIANCE COLOR & CHEMICAL CO., NEWARK, N. J.
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Why risk the headaches fugitive colors cause

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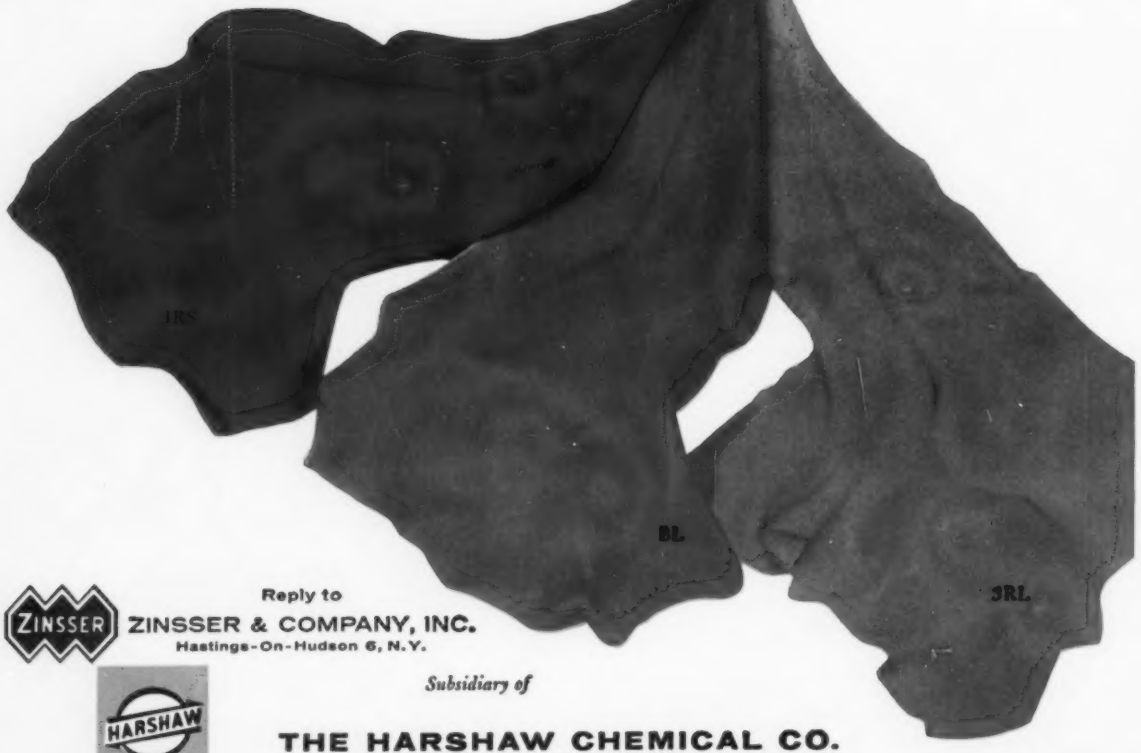
Perkins' Mauve

Components of Mauve and Mode Shades



ZINSSER

Reply to
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Hastings-On-Hudson 6, N.Y.

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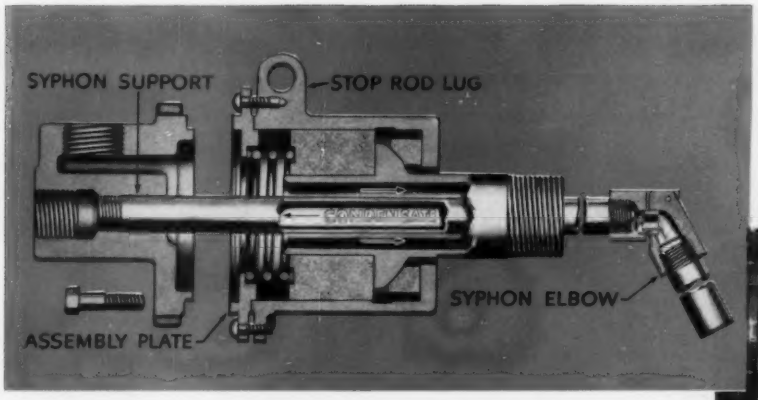
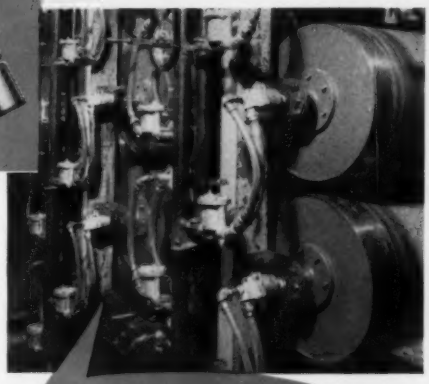
Subsidiary of

THE HARSHAW CHEMICAL CO.
CLEVELAND 6, OHIO



TYPE S-B2P Johnson Joint with Syphon Elbow. This is a completely self-supporting unit, and like all Johnson Joints has no packing, needs no lubrication. Installation picture shows Type S-B2P Joints on dry cans in southern mill.



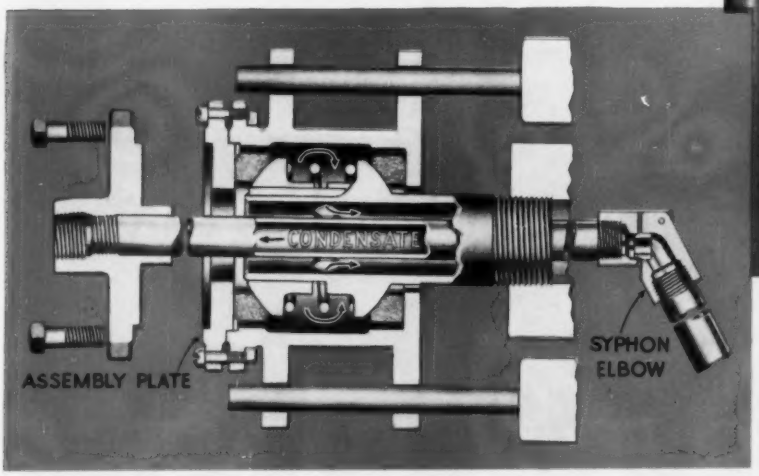
Best thing that's happened in a long time ...for Dry Cans, Slashers and Print Cans

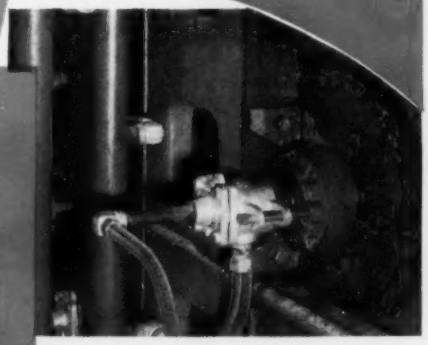
What's happened is this. To match the efficiency of the Johnson Joint for getting steam into cans and rolls, Johnson has developed a mechanical syphon elbow for the job of getting condensate out again. It permits the use of two straight pipes for the syphon pipe . . . is hinged to pass right through the joint . . . seats of its own weight when in position. A special assembly plate is provided on the joint to permit removing the head, and syphon pipe, without disassembling the joint.

Try it yourself—Thousands of installations have proved the two combinations shown are particularly suited for the textile industry. Whatever your needs, we will gladly furnish a pair of units for 90-day trial in your own mill, without cost or obligation.

Write for full information

JOHNSON *Rotary Pressure* JOINTS with JOHNSON SYPHON ELBOWS





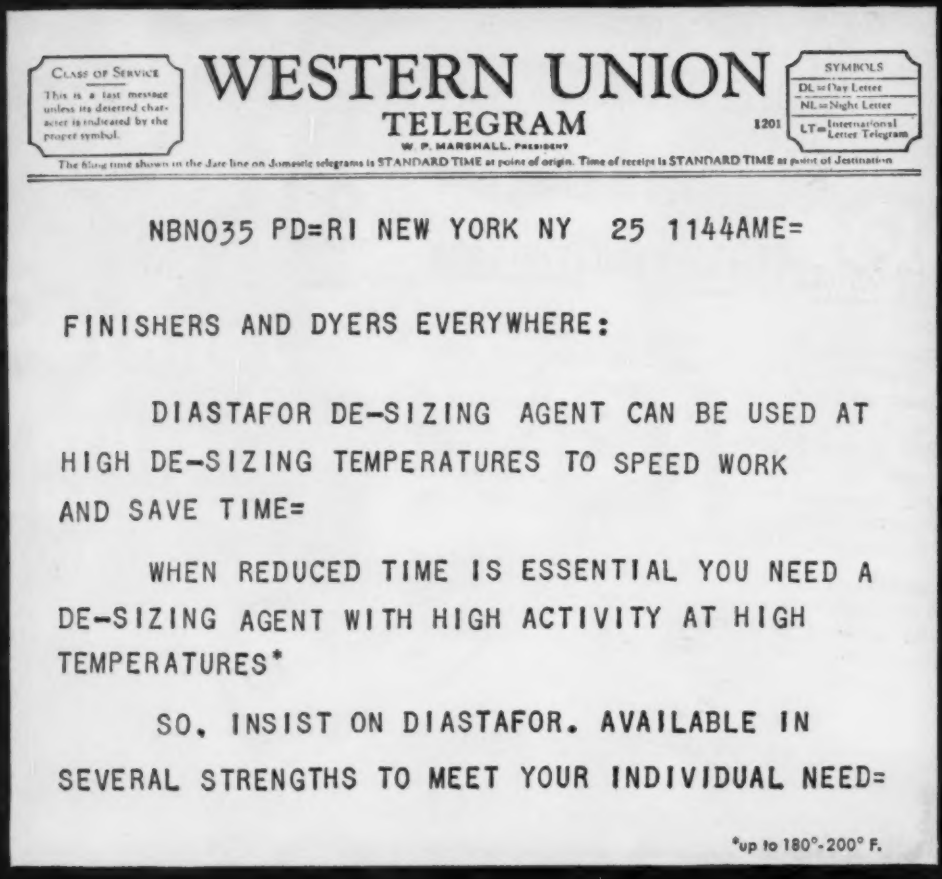
TYPE LJ Johnson Joint with Syphon Elbow. Has lugs on body for support rods, which carry all weight of body and connections, permit rotating assembly to "float" freely inside. Steam inlet is in side of body, as shown in installation view.

THE JOHNSON CORPORATION

815 Wood Street, Three Rivers, Michigan

Rotary Pressure Joints • Direct Operated Solenoid Valves

When time means cost, reduce it safely with thermostable Diastafor



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...with practical, technical assistance in solving a wide variety of operational problems

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the New Nylon Staple used in Ford car

WHY IS THE NEW NYLON STAPLE USED IN FORD CAR FLOOR COVERINGS?

Because even a *small* percentage of The New Nylon, in automotive floor covering fabrics, gives wear advantages out of all proportion to the amount used. It means longer wear ...it means greater crush resistance...it means less matting ...it means higher abrasion resistance...based on comprehensive laboratory and practical test methods applicable to the automotive industry.

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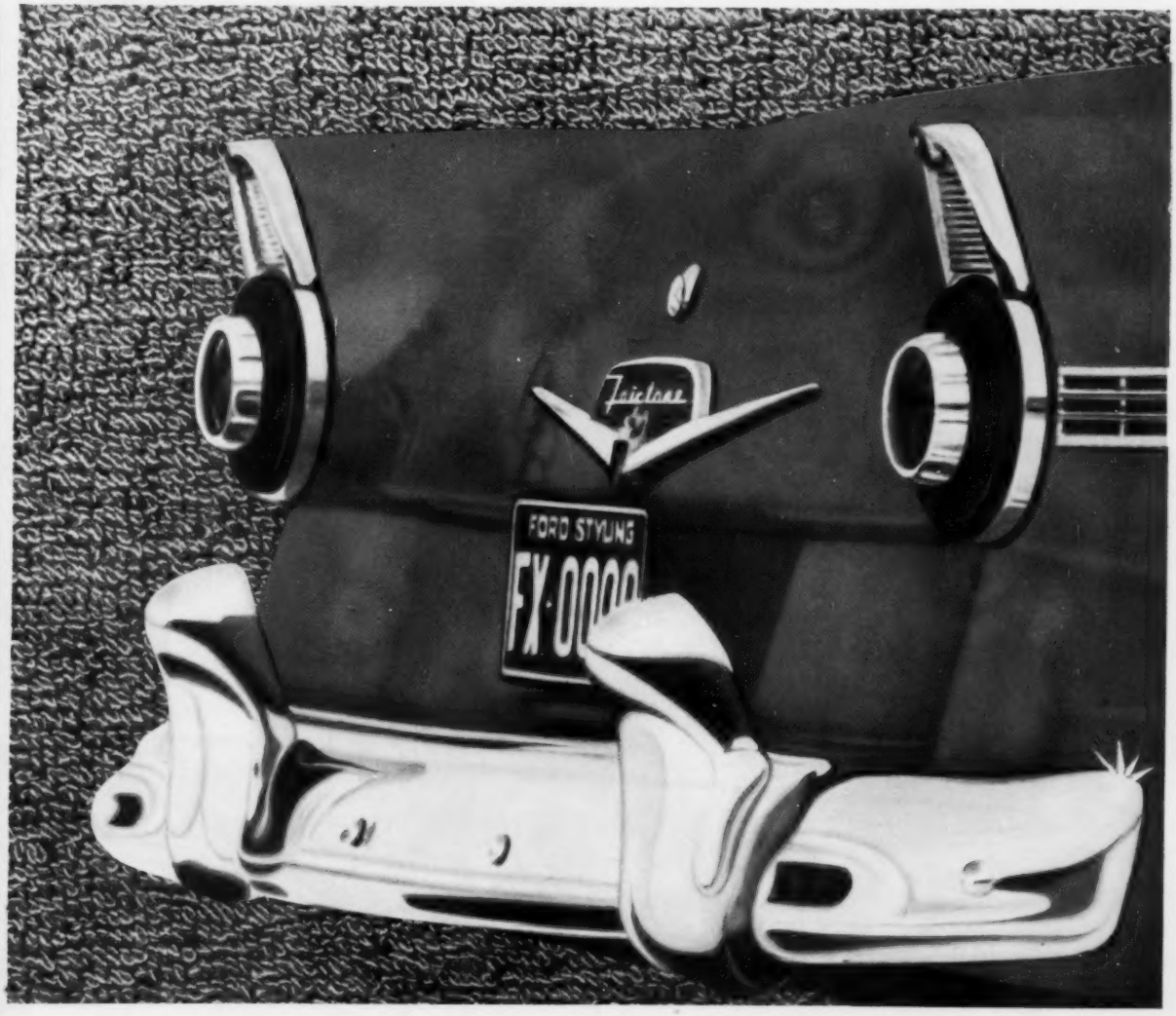
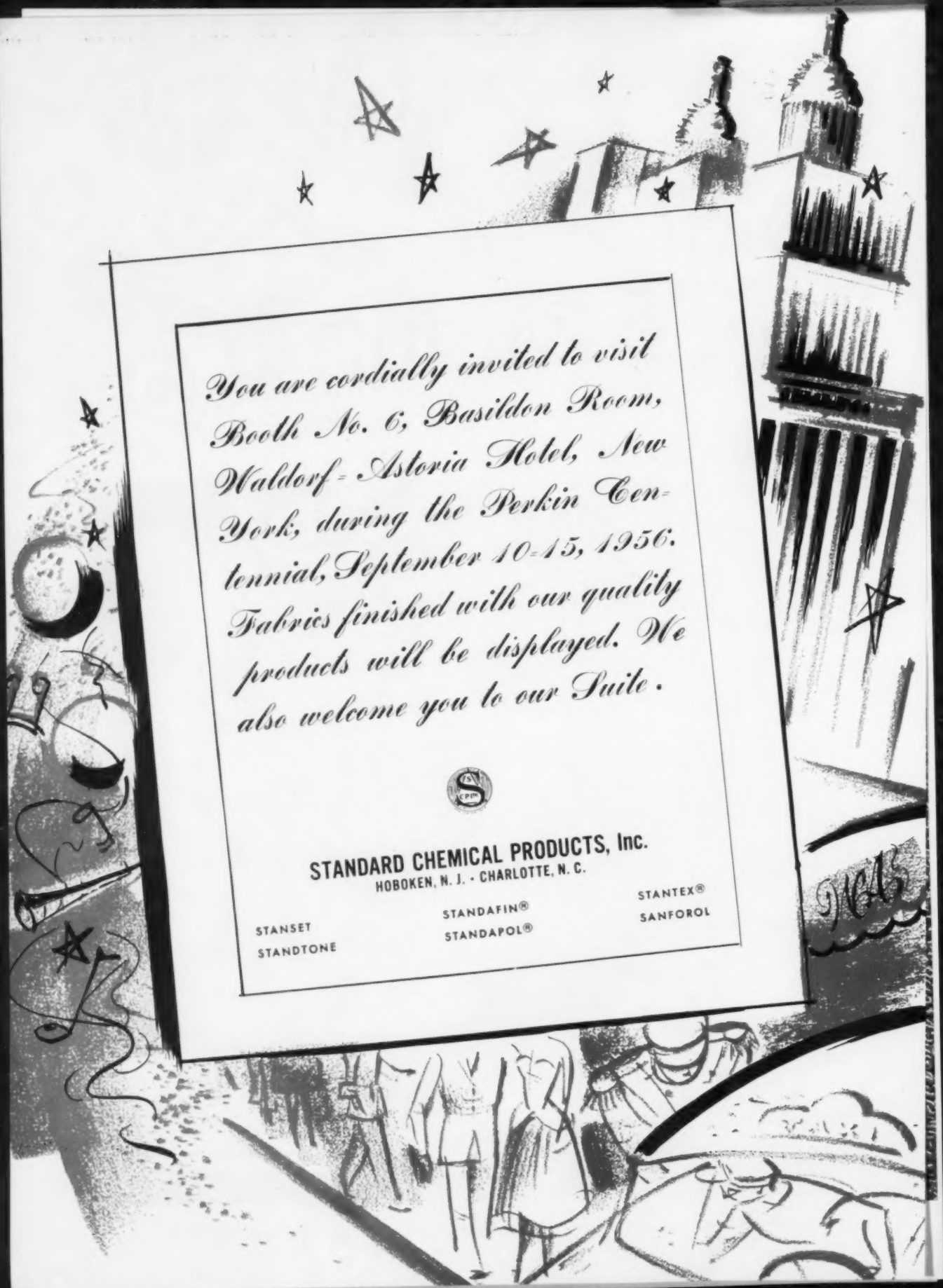
MASLAND AND MOHAWK

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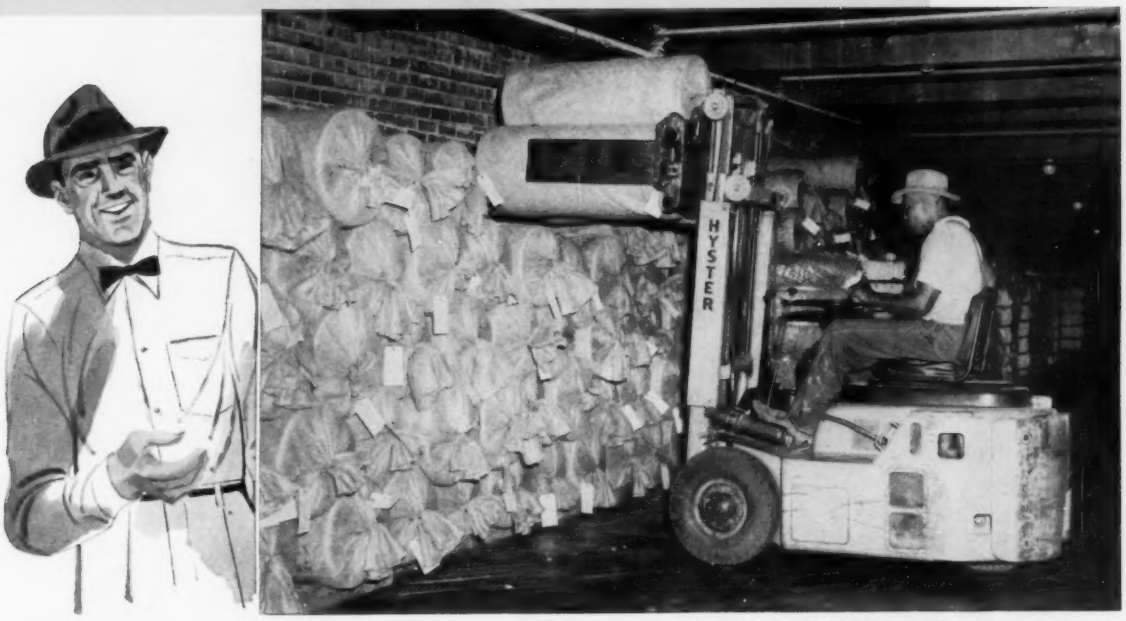

QN-20 with Load-Grab® stacking rolls of wrapped cloth waiting shipment. Free-lift upright is essential for high stacking in low ceiling warehouses.

Pictured above is one of many typical examples of how Hyster® Industrial Trucks are helping to effect tremendous savings in the cost of handling materials in the Textile Industry.

Even if you are now using lift trucks or have never used industrial trucks of any kind, your Hyster dealer can show you how you can quickly realize more profit from your operation with these multi-purpose utility tools. Your Hyster dealer knows materials handling . . . he is an expert on the problems and their solution. He can help you with special techniques and cost reducing methods. Call him today...why not take advantage of his materials handling know-how?

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1. **PLANNING** — your Hyster Dealer will plan your materials handling operation from scratch, or will analyze your present system to see if it can be improved.
2. **THE RIGHT TRUCK** — for your job from Hyster's complete line of industrial trucks (1,000-30,000 lbs.) and over 100 job-attachments.
3. **THE RIGHT SERVICE**—ample spare parts stock, shop facilities, factory-trained mechanics and an efficient field service that keep your Hyster lift trucks going on your job, wherever your job might be located. Hyster trucks are noted the world over for their low downtime.

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for better fit!

Sonoco Cones for every need

for better delivery!

Precision winding starts with precision made cones. Without precision winding you cannot get the sound yarn package that delivers at even tension and without break. SONOCO cones are made to fit the winding mandrel accurately. This, coupled with special SONOCO process surfaces for every type of winding job, results in a perfect package that insures smooth, even delivery of yarn under high speed working conditions. Cone surfaces include plain, high and low mark, Velvet and Unitex. SONOCO cones are made with notches, scores and in many nose designs. Lacquer tipping, dyed base and tip, striped base and colored paper can be furnished for yarn identification. Consult your SONOCO sales-engineer, or write us direct.

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6 x 3 = 18

6 - 2 = 4

Simple Arithmetic made

3 x 4 = 12

2 + 2 = 4

Nacconol® SL

the largest selling liquid detergent * *in the textile industry*

Many economy-minded mills are cutting handling time and costs with Nacconol SL. Being a liquid concentrate, it is easy and clean to use, requires no dissolving. Simply add water to secure the desired working concentration.

And remember this extra, you get more cleaning-power-per-dollar with Nacconol SL (based on an active ingredient basis compared with most dry products). Why not join the mills that are cutting production costs with Nacconol SL?

Other popular forms of Nacconol for wet processing include Nacconol DB, Nacconol DBX, Nacconol NR and Nacconol NRSF. Send for your sample and see for yourself how effective Nacconol SL really is.

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Allied Chemical

Samples promptly sent on request.

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Automatic Filling Winder

Typical Mill Installation

See its NEW FEATURES at
SOUTHERN TEXTILE EXPOSITION

Spaces 235 and 236, Second Floor — Main Bldg.

NEW FEATURES include elimination of starting tail (see photos), filling box stacker for spun yarns and automatic lint cleaning attachment. With the filling box stacker one box services each spindle. Bobbins are automatically deposited in the box parallel to each other with all butt ends together. Automatic pinboarding is available for filament yarns. The automatic lint cleaning attachment is the overhead traveling blower type, already widely used in textile mills with proven efficiency.

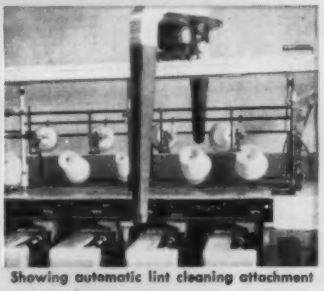
This superspeed (15,000 r.p.m.) fully automatic machine winds yarn at a cost as low as ¼¢ per pound when normal mass production conditions obtain. It also produces uniformly perfect bobbins, thereby reducing weaving defects. All operations are automatic except donning and doffing of magazine cone creel and piecing up of broken ends.

Don't miss the Model 66 Exhibit at Southern Textile Exposition, if you plan to attend. If not, send for Bulletin M-4A which gives complete details.

Bobbin entering drive

Commencing the wind

Tail released and secured under first wraps of bunch, having been trapped alongside driver during transfer cycle.



Showing automatic lint cleaning attachment

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VOTE + but

Study the issues and the candidates— and then decide where you stand

You wouldn't buy a new car without at least driving it around the block.

You wouldn't buy a new house without checking up on the neighborhood, the schools, and any back taxes.

So vote—but don't vote in the dark in this exciting election year.

Listen to what candidates are saying on TV and radio.

Read your newspapers—especially the political news and editorial page.

Talk things out with your neighbors over the back fence and at the filling station on the corner. Take part in the discussion group at your church, club, lodge, or school.

Think about the issues and the candidates—and then make up your own mind. Remember, nobody is in that voting booth but you and your conscience. Step behind that curtain with pride on election day. Then vote as a free American.

VOTER'S CHECKLIST

1. Be sure you're registered.

2. Study the issues and candidates. Go to rallies. Ask questions. Read the papers. Listen to speeches.

3. Mark up a sample ballot in advance. (They are published in the papers.)

4. Join your neighbors at the polls on Election Day November 6th.

Is your name in the book?

You can't vote if you're not registered. You lock yourself out of the polls, unless you're a registered voter. And you and only you can get your name in the Registration Book. When they call the roll on election day, will you be there? Do you know anyone who won't?

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PUBLIC SERVICE ADVERTISING COUNCIL

A new *Jockey Red Shade* for ORLON*

with Sevron* Brilliant Red B and Orange G

You now can make economical flaming jockey reds by using the two newest "Sevron" colors—Brilliant Red B and Orange G—in combination. Brilliant Red B is a bright bluish red, while Orange G is a bright yellow orange. Both colors are completely compatible with the other "Sevron" dyes—giving you the opportunity for a whole new range of bright shades.

Like all "Sevron" dyes, they were developed specifically for dyeing "Orlon" acrylic fibers. They dye rapidly with good build-up—and have the high fastness properties that make the "Sevron" colors the most popular dyes for "Orlon."

Technical bulletins are available on these new colors. You may have them by writing: E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyes and Chemicals Division, Wilmington 98, Del.

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use all the size you need with nylon yarn

it stays flexible with

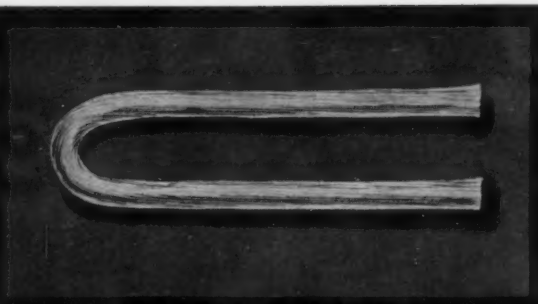
NOPCOSIZE® N

Now it is possible to apply extra heavy sizing to low twist nylon yarn—even producer's twist—and still get flexibility. Nopcosize N is *internally plasticized* to permit you the greater depth of size protection needed to avoid filament breakage.

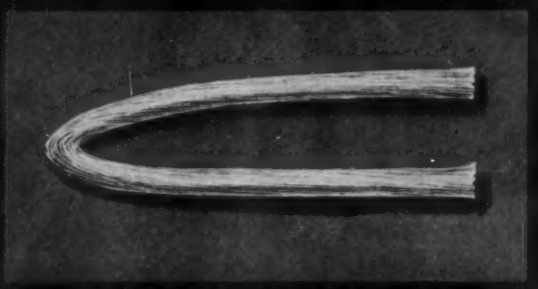
Mill tests on producer's twist yarn have proven eminently satisfactory.

Try this outstanding size on your warps and prove it to yourself.

Nopco Chemical Company,
Harrison, N. J.



SIZED WITH 2¼% NOPCOSIZE N



SIZED WITH 2% CONVENTIONAL SIZE

These enlargements show the much greater flexibility of nylon yarn sized with Nopcosize N.

NOPCOSIZE N—

your best defense against:

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TEAR DROPS

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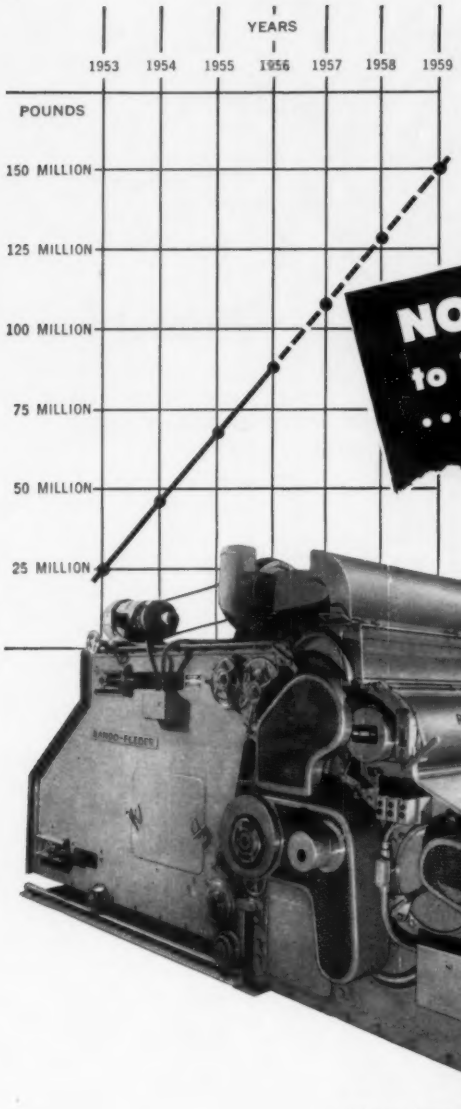

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These ingenious machines were designed and built solely for the production of nonwovens. They produce a higher quality fabric, faster and more economically than by any other method.

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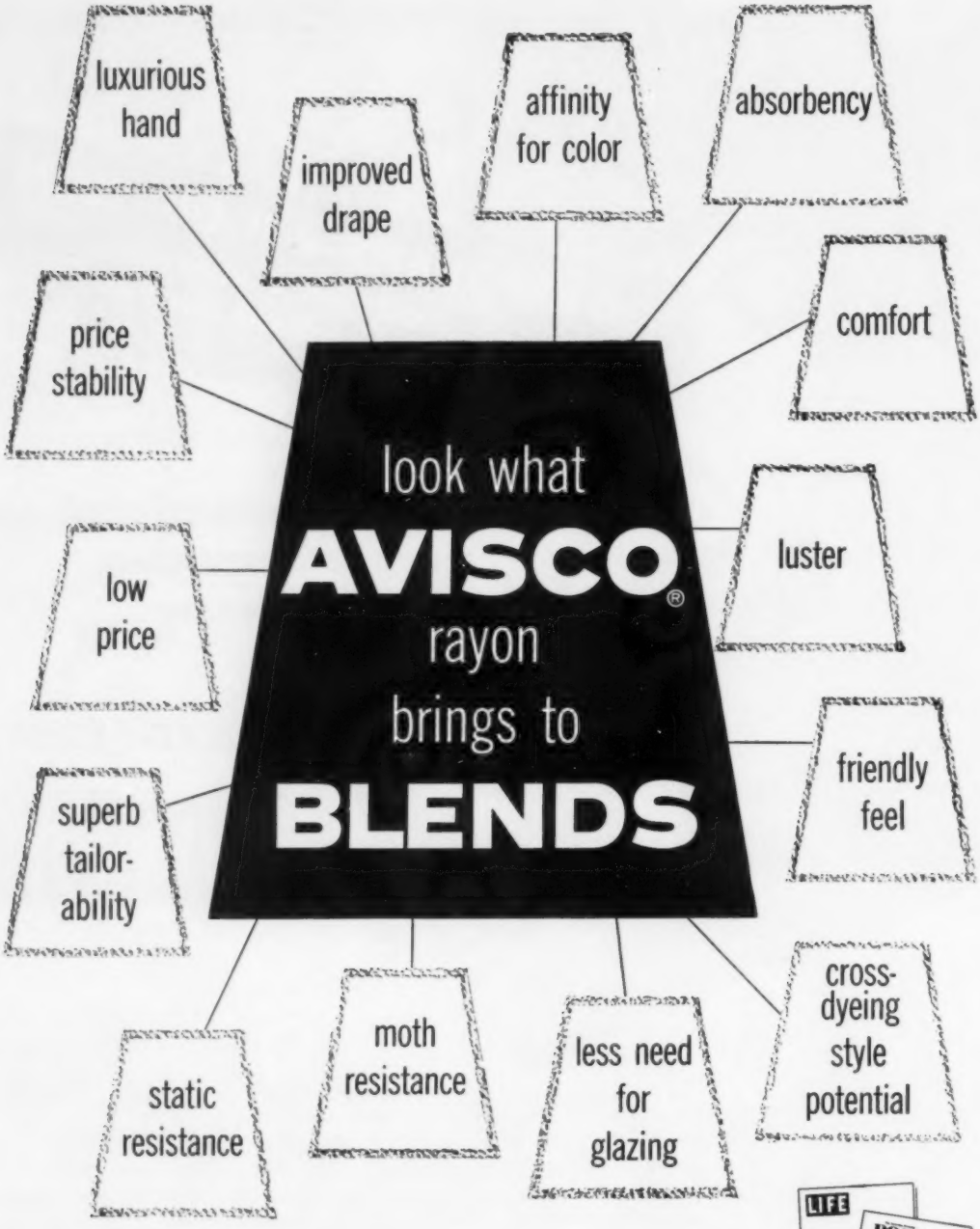

More and more manufacturers and cutters are discovering the magical effects they can achieve with new blends of rayon with other fibers.

The Avisco Integrity Tag makes such blends promotable. Fabrics qualified to bear the tag enjoy immediate consumer recognition at point of sale. This recognition is created by millions of dollars of national advertising which assures quality all the way back to the fiber.

We will be happy to consult with you on the myriad possibilities of rayon blends. Call LA 4-7200 or write American Viscose Corp., 350 Fifth Ave., New York 1, N.Y.

News IN BRIEF

Textiles So-So in 1956. This year will probably be classed as an in-between year for textiles — not as good as 1955 nor as bad as 1954 — reports Commerce Secretary Weeks. Today's high prices for raw

materials and other cost elements mean that a relatively small change in sales has far greater influence on profits than changed volume would indicate. Stripped of excess verbiage, the Secretary's report says that supply of textile mill products still exceeds demand.

False Ticketing Enjoined. An order to stop preticketing hosiery with fictitious retail prices has been issued against two New York hosiery mills by the Federal Trade Commission examiner. The order prohibits the companies from representing excessive amounts as the usual and regular prices for their hosiery, and prevents them from operating any plan whereby retailers can misrepresent prices.

Wool-Dynel Best for AF. A wool-Dynel fabric was found most suitable of several blends tested for Air Force summer flight clothing, according to a report of a USAF-sponsored research project. Various fabrics, including blends of wool with nylon, Dacron, Orlon, and Dynel, were evaluated for comfort appearance, wearability, and tailorability. Copies of the 76-page report, "The Development of Wool-Synthetic Blended Fabrics for Summer Flight Garments," PB 121153, by G. O. Langlois and S. L. Fuller of Lowell Technological Institute, are available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. Price: $2.00.

Industrial Textiles Group Organized. The National Council of Industrial Textiles, Inc., has been formed, with M. J. Lovell as director, and offices at 112 West 34th St., New York 1, N. Y. Avowed purpose of the Council is to serve as "an annual market place for the industrial textile industry's many products, as a meeting place for its technicians, and a forum for the exchange of industry ideas." The Council plans to hold a trade show and conference in New York next May.

Personnel Conference. This year's Southeastern Personnel Conference will be held September 12-14 at Duke University, Dur-

ham, N. C. Subjects to be discussed include employee and community relations, employee behavior, and union activities.

Textile Employment in South. In June of this year 598,000 persons were on the payrolls of textile mills in Ala., Ark., Fla., Ga., La., Miss., N. C., Okla., S. C., Tenn., Tex., and Va., according to a report from the U. S. Department of Labor. One year ago there were 612,200 textile industry employees in the area.

Cotton Fabrics Production Up. Cotton broad woven fabric production in the first quarter of 1956 was 4% above the output for the fourth quarter of 1955, and 5% higher than the first quarter 1955 level. Fabrics in all categories listed by the Bureau of the Census showed increases, ranging from 1% for colored yarn fabrics to 18% for napped fabrics, blankets, and blanketing. Print cloth yarn fabrics, the biggest production item in the Bureau's list, showed an increase of 2% over fourth quarter 1955 output, and 1% over first quarter 1955.

To Study Indirect Labor. "Measurement of Indirect Labor in Industry," traditionally ignored by the industrial engineer, will be the theme of this year's Heart of America Industrial Engineering Conference, to be held at the University of Kansas Medical Center, Kansas City, Kan., November 16. Under discussion will be the techniques used in measurement of maintenance labor and warehouse and materials handling operations, as well as office and clerical functions.

Apparel Advertising Expenditures. According to a recent issue of *Advertising Agency Magazine*, $13,561,877 was spent during the first quarter of 1956 for advertising of apparel and accessories. Compare this with $49 million for foods, $34 million for automotive, $26 million for toiletries, $19 mil-

lion for household soaps and cleansers, $17.5 million for drugs and remedies, $16 million for smoking, $15 million for house-

Most *Modern* sales tool in the

TEXTILE INDUSTRY

Beechcraft Executive Airplanes

Multiply the effectiveness of your best salesman by five.
Demonstrators available.

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airfleet of the textile industry

hold equipment, and $14.5 million for industrial materials.

Clemson Grads Do Well. Of 333 graduates of the textile school at Clemson College during the period 1901-1940, 48% earned more than $10,000 in 1953, reports Dean Hugh

M. Brown. Of the 333 grads who responded to a survey, 69% earned more than $8,000, and 14% made $20,000 or better. Only 2.1% of the group took in less than $4,000, 3% were in the $4,000-$5,000 bracket, and 6% earned between $5,000 and $6,000.

To Expand Bale Covering Tests. From 10,000 to 12,000 bales of cotton will be experimentally wrapped during the 1956 harvesting season, the National Cotton Council announces. Tests will center around medium- and heavyweight X-crepe paper, and burlap laminated with polyethylene film. Small-scale tests will be run on a number of other materials, including woven and nonwoven cottons.

Multi-Feed Knitter Displayed. The prototype of a new 400-needle seamless hosiery machine is on display in the New York showrooms of Scott & Williams, Inc. It is claimed that the machine is capable of knitting two courses simultaneously in all parts of the stocking except the heel and toe. This is accomplished by an attachment to the firm's standard 400-needle unit; the attachment can also be fitted as a conversion for certain other of the company's single-feed models, it is reported.

Wool Fabrics Production Up. Woolen and worsted fabric production during the first quarter of 1956 was 81.6 million finished yards — 6% above the fourth quarter 1955 output, and 11% above the comparable period of last year.

Textile Institute Conference. Subject of the 1957 Annual Conference of the Textile Institute will be "Process Control in Textile Manufacture." The Conference will be held May 21-24 at Bournemouth, England.

Apparel Course at Georgia Tech. A course in apparel engineering is to be set up at the A. French Textile School of Georgia Institute of Technology, with the cooperation of the Southern Garment Manufacturers Association. SGMA will finance the establishment of the course, which will then be taken over and supported by the State of Georgia.

Textile Mergers Low. The Federal Trade Commission has announced that out of 689 mergers in the manufacturing and mining industries in 1955, only 35 were in textiles. The textile industry stood 9th in merger activity in the list of 20 industry groups, preceded by nonelectrical machinery (112 mergers), food (87), mining (62), primary metals (59), fabricated metals (56), electrical machinery (53), chemicals (52), and transportation equipment (41).

Reduce Compensation Costs. Practical methods of sharply reducing workmen's compensation insurance costs are described in a booklet, "A New Way to Reduce the Cost of Workmen's Compensation Insurance." The booklet outlines the four basic components in the medical and health program which the Liberty Mutual Insurance Co. has developed: an in-plant

One Way to Help the "Ailing" Hosiery Industry

Marion McKnight, Miss South Carolina of 1956, is shown here helping to remedy "the depressed condition" of the nylon hosiery market.

Miss McKnight is burning 350 dozen pairs of nylon factory rejects. It is estimated that these would yield approximately 125 dozen, a life-time supply for her, of so-called first quality stockings, after being mended and reworked by a waste converter.

As was recently pointed out during the National Association of Hosiery Manufacturers convention held in Roanoke, Va., 35% of all rejects sold to converters as manufacturing waste get back into the hosiery market at low prices to compete with the same mills which made them in the first place.

The donor of the fuel was Sumner Hosiery Mill, Gastonia, N. C., a full-fashioned hosiery manufacturer.

L. F. Dommerich & Co., Inc.

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medical plan, an industrial hygiene program, a medical advisory service, and a rehabilitation program. The 44-page booklet is available from Liberty at 175 Berkeley St., Boston 17, Mass.

Hosiery Tariff Concessions. Ad valorem rate on three hosiery items was lowered as a result of the recent GATT conference in Geneva, Switzerland: hose and half-hose of cotton or other vegetable fibers, reduced from 50% to 42½%, in three stages; embroidered hose and half-hose valued at more than $3.50 per dozen pairs, and made wholly or in major part of wool, reduced from 40% to 34%, in three stages; and embroidered hose and half-hose valued at more than $5.00 per dozen pairs, and made wholly or chiefly of cotton, reduced from 30% to 25½% in three stages. Imports of these items are said to be of minor importance.

USDA Needs Chemists. The U. S. Department of Agriculture has openings for chemists with specializations in the fields of analytical, organic, physical, inorganic, and biochemistry, as a result of research expansion at the Southern

Regional Research Laboratory at New Orleans, and at other USDA installations in Texas, Oklahoma, Arkansas, and Louisiana. The positions pay from $5,440 to $10,320 per annum. Interested and qualified persons should apply to Eighth U. S. Civil Service Region, 1114 Commerce St., Dallas 2, Texas.

News in Brief

Screen Weavers Group. Weavers of fibrous glass insect screening have organized a trade association within the National Federation of Textiles, Inc., to be known as the Glass Fiber Screen Weavers Group. George H. Day II, vice-president of Chicopee Mills, Inc., is chairman; C. A. Comfort, vice-president of the Exeter Mfg. Co., is vice-chairman; and Edmund Wellington, Jr., secretary.

Japanese Firm Expands. Kyokuichi Co. Ltd., integrated knitwear firm whose business is largely dependent on exports to the

Woolen Mills Are Being Exported—Axelrod

Because of the constant loss of orders to foreign mills "it will not be long before those few worsted mills left in the U. S. will be put out of business," Alan S. Axelrod, vice president of The Bell Co. and Lippitt Worsted Mills warned in a recent wire to several members of Congress. He cited the loss of a 75,000-yard order from a leading Ohio clothing manufacturer "due to their buying imported worsted fabrics at prices which are impossible to meet." Mr. Axelrod said "this is only one of many cases."

In a statement amplifying his views, he said:

"The Government, instead of standing idly by while low-wage imports drive American mills out of business and put their employees out of jobs, should serve notice now that it will invoke the so-called Geneva reservation.

"The reservation was negotiated with Britain in 1947 when the U. S. sharply reduced wool textile tariffs. It provides that the U. S. may increase to 45% the ad valorem duty on wool cloth when imports in any calendar year exceed 5% of the average annual production of such cloth in this country in the three preceding years. Any increase in duty, however, would apply only to the imports in ex-

Mr. Axelrod

cess of 5 per cent. The duty now is 25% ad valorem.

"A hearing was held on April 2 by the U. S. Committee for Reciprocity Information but there has been no official word as to whether the Government will increase the duty when the 5% trigger point is reached. Wool cloth imports last year hit a record high of about 20 million linear yards. Indications are that this record will be topped in 1956 and that the trigger point will be reached earlier than in 1955.

"American mills and their employees are entitled to know now whether the Government will or will not invoke the reservation. If the Government fails to act it will mean, in effect, continued exportation of American mills and jobs to Japan, Britain, France, Italy, and other low-wage areas.

"Further, in mid-March the wool textile industry petitioned the Director, Office of Defense Mobilization, for an investigation of what the industry considers to be the threat to national security caused by wool textile imports. Under the Trade Agreements Extension Act of 1955 the President can restrict imports in such cases.

"To date there has been no visible action by the ODM other than an announcement that a hearing would be held some time. There is serious doubt that the industry now could meet mobilization needs, and textiles are considered as vital to security as guns, ships, planes, and bombs.

"Since the end of World War II, the number of woolen and worsted looms and spindles has declined by nearly 50 per cent, in part because of imports. If for no other reason than national security, the Government must prevent low-wage imports from over-running our market to an even greater extent than they have."

News about

B.F.Goodrich Chemical *raw materials*

Label for quality denims

HYCAR-SIZED DENIM WEARS 3 TIMES LONGER!

HERE'S how to build the rugged wearability that consumers look for into your denim line: Size your material with Hycar Latex!

Actual tests* prove that sizes made from Hycar Latex dispersions increase the wear resistance of cotton fabrics as much as 300% more than starch sizes! And at the same time, Hycar-treated materials possess a soft—yet full—hand which lasts through scores of washings. Excellent color-fastness and resistance to fading and staining are other advantages. And Hycar sizes are as economical as they are easy to apply and use.

Hycar is prepared and applied at room temperature using conventional slashing equipment. Application is simple—and permanent. The size is compatible with Sanforizing processes.

**Tests made under Federal Specifications CCC-T-191-B.*

Hycar Latex can help you upgrade many fabrics in many processes. For complete information, write Dept. ET-5, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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American Latex

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B.F.Goodrich GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

Eli Whitney's first commercial cotton gin was on display recently at the Citizens & Southern National Bank in Atlanta. The gin was discovered in Wilkes County, Georgia, in 1934, after having been lost for 140 years. The gin will be housed in a special museum in Savannah; Whitney developed the gin while he was visiting a plantation near there.

U. S. A., has recently completed a new yarn- and piece-dyeing plant which will enable the firm to do all its own dyeing except for wool tops. The mill manufactures wool gloves, slipper socks, sweaters and other outerwear, swim trunks, and underwear, and is said to account for about one-third of Japan's exports of these items.

C of C GATT Approval Fails. A resolution approving the Organization for Trade Cooperation (OTC) and the General Agreement on Tariffs and Trade (GATT) failed to receive the necessary two-thirds of votes of U. S. Chamber of Commerce members, and so was defeated. However, the vote was 1,376 to 1,200 in favor, which brought the comment from U. S. Department of Commerce Secretary Weeks that the vote was "heartening." The resolution was bitterly protested by Chambers of Commerce in textile areas and in other areas threatened by imports from low-wage countries. [See TEXTILE INDUSTRIES for July, 1956, for details on defeat of another C of C resolution opposed to textile interests.]

Compacting for Knit Goods. Exclusive knitting industry rights to the compacting process developed by Fabric Research Laboratories [see TEXTILE INDUSTRIES for May, 1956, pp. 181-182] have been acquired by Tubular Textile Machinery Corp. The process is designed to effect maximum shrinkage control on textile materials, and is already in use for woven fabrics. According to Tube-Tex, preliminary shrinkage tests indicate that the process will be effective on all types of knit fabrics, regardless of construction or yarn content. The process is now in the pilot plant stage for knit goods.

Plucked Wool Next? Sheep may be plucked instead of shorn if current experiments in Australia are successful. Research is directed at

means of creating an artificial break in the fibers while the wool is still on the sheep's back. Considerable progress has already been made.

News in Brief

AATCC News. Members of the American Association of Textile Chemists and Colorists will make their choice in October between two candidates for the presidency of the Association. Nominees are George O. Linberg, vice-president of Synthron, Inc., and Walter M. Scott, assistant director of utilization research of the U. S. Department of Agriculture. • • • A new committee to evaluate the places in which electric heating can help the textile finishing industry has been established by AATCC's Executive Committee on Research. Edward W. Lawrence, director of Cranston Print Works' research and development labs, is chairman.

New Cotton Standards. U. S. Department of Agriculture has announced a proposed promulgation of a new descriptive grade standard for SGM cotton, and extension

of the field trial for proposed physical standards for spotted cotton. USDA proposes that the new SGM standard will be effective August 1, 1957.

Synthetic Fabrics Production Down. Production of broad woven goods of man-made fibers and silk was 636 million linear yards in the first quarter of 1956 — 4% below output for the fourth quarter of 1955 and 3% below the figure for the corresponding period of last year. Only increase posted was for 100% filament rayon and/or acetate fabrics, which increased 2% over last year's fourth quarter.

Plastic Jacquard Cards. Polyvinyl chloride foil is replacing paper for Jacquard cards in English weaving mills, reports a correspondent. Claimed advantages include stability over wide varia-

Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

Unloading Bulk Salt From Boxcars—at Lower Cost

While salt is a relatively low-cost material, handling it often involves considerable expense in time and manpower. Unloading bulk salt from boxcars, for example, has always been one of the problem spots. Today, however, a number of money-saving unloading methods have been developed for large and small plants.

Determining which of these modern salt unloading methods is best for your company depends on the tonnage involved, and specific plant requirements. But you can generally find one which will pay for itself—in savings on time and labor—over a relatively short period. Here is a review of four practical salt unloading methods, and the equipment used in each.

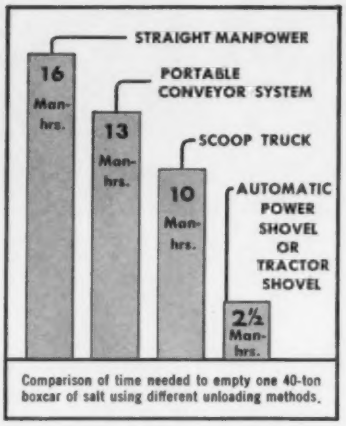
Portable conveyor system. This is the simplest improvement over straight manpower. A power-operated belt conveyor of suitable length is placed inside the car door, and salt is then shoveled onto it. Conveyors may be used to bring salt directly into the plant—or even to storage areas above dock level. A good conveyor for most needs is generally about 16 to 18 feet long and capable of moving salt up a 30° slope. With a conveyor, a good deal of manpower in shoveling is required, but one 40-ton car can be unloaded in about 12 to 14 man-hours—a 19% saving in time over straight manpower.

Scoop truck and conveyor. A scoop truck is simply an enlarged scoop shovel with two small wheels at the bowl of the scoop. Whereas a shovel holds only about 20 lb. of salt—a scoop truck holds 100 to 150 lb. In operation, the scoop is pushed into the salt, tilted up, and then wheeled to the conveyor at the car door. With just one of these scoops, a worker can unload 40 tons of salt in 10 hours—and once the job is under way, there is room for two or three more men with scoops. An important point: A good scoop truck costs only about $50.

Automatic power shoveling. This is one of today's most popular methods for unloading bulk salt—and many manufacturers offer excellent power-shovel equipment. Basically, the device consists of a large power-operated scraper blade mounted on a cable. The scraper is moved toward the end of the car, and as soon as this motion stops, a power winch takes hold to drag the scraper toward the car door. Salt is pushed out through the door by the scraper. One man can unload a 40-ton car in 2 or 3 hours by this unique method. Both winch and motor for the power shovel must be permanently mounted on the dock or side of the building—but the installed cost of this equipment is moderate.

Small gasoline or electric tractor shovel, somewhat similar to a fork-lift truck, but with a scoop mounted in place of the forks. Many types are available, some having forks interchangeable with the scoop. One man on this type of truck can empty a 40-ton car in 2 to 3 hours—the equivalent of power-shovel unloading. The higher cost of a tractor shovel, however, is often justified when it can be made available for other purposes.

Extra savings are possible with tractor shovels with scoop attachments. These trucks not only move salt out of the boxcar, but also transport it to any point of storage or use within the plant. This eliminates the need for various types of conveying equipment—either on the dock or in the plant. And manpower for handling salt in the plant is considerably reduced.



Comparison of time needed to empty one 40-ton boxcar of salt using different unloading methods.

TECHNICAL SERVICE WITH YOUR SALT

Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt you use. International produces both Sterling Evaporated and Sterling Rock Salt in all grades. And we also make automatic dissolvers in metal or plastic for both types of salt. So we have no reason to recommend one type of salt over another; we simply suggest the type and grade of salt most perfectly suited to your needs.

If you'd like help on any problem concerning salt or brine—or further information on salt unloading—contact your nearest International sales office.

International Salt Company, Scranton, Penna.
Sales offices: Atlanta, Chicago, New Orleans, Baltimore, Boston, Detroit, St. Louis, Newark, Buffalo, New York, Cincinnati, Cleveland, Philadelphia, Pittsburgh, Richmond.

FOR INDUSTRY, FARM, AND THE HOME—
STERLING SALT
PRODUCT OF INTERNATIONAL SALT CO., INC.

tions in humidity, durability, and resistance to damage by handling.

Research — Textile Industry's Stepchild. Industry as a whole in the U. S. spends an average of 2% of its sales volume on research — the textile industry spends an estimated 1/10 of 1%. The Du Pont Co. spends twice as much on fiber research alone as the entire textile industry spends on any kind of research.—*William A. Newell, research coordinator, School of Textiles, N. C. State College.*

Japanese Publications. With the current interest which mill men are taking in the Japanese textile industry, readers may be interested in the following list of English-language Japanese textile publications, which was supplied to TEXTILE INDUSTRIES by a correspondent in Japan. Regular-mail and air-mail subscriptions may be entered to any of them; the publisher of a particular journal should be consulted about prices.

Japan Textile News—Monthly
Osaka Textile Research Co.
58, 2-chome, Azuchimachi
Higashi-ku, Osaka

Journal of the Textile Machinery Society of Japan—Semi-Annual
Textile Machinery Society of Japan
28, 2-bancho, Namba-Shinchi,
Minami-ku, Osaka

Japan Textile Export Statistics—Monthly, also year book
Japan Textile Export Statistics Association
26, Hommachi 2-chome
Higashi-ku, Osaka

Jiji Textile News — Daily (three editions)
Jiji Press, Osaka Bureau
18, 2-chome, Kitahama
Higashi-ku, Osaka

The Kureha Textile Review — Quarterly
Kureha Spinning Co. Ltd.
2-chome, Hommachi
Higashi-ku, Osaka

Monthly Report of Japanese Cotton Industry
Quarterly Review of Japanese Cotton Textile Industry
Labour Situation of the Cotton Spinning Industry in Japan
All Japan Cotton Spinners' Association
Mengyo Kaikan Bldg., 8, 3-chome
Bingomachi, Higashi - ku, Osaka

The Cotton Statistical Journal—Monthly
Japan Cotton Statistics and Related Data—Annual
The Cotton Economics Research Institute
22, 1-chome, Utsubo Kitadori
Nishi-ku, Osaka

Hosiery Giveaways Get Out of Hand. The time-honored practice of salesmen giving hosiery to salesgirls in retail stores has reached such proportions that some hosiery

mills are worried. Some salesgirls have been getting enough free hosiery to set up a small business of their own with the surplus, reports National Association of Hosiery Manufacturers. One possible solution, already adopted by some mills, is to require the salesman to pay part or all of the cost of such gifts.

Government Data - Grab Discussed. The problem of the acquisition by government contract of manufacturers' proprietary technical data or know-how, without recompense, is discussed in a new 32-page booklet, "Proprietary Manufacturing Know-How and the Requirements of National Defense," published by the Machinery and Allied Products Institute. Copies are available without charge from MAPI, at 1200 Eighteenth St., N. W., Washington 6, D. C.

News in Brief

Import Boycott Spreads. Boycott of Japanese goods by retailers has spread from its starting point in Kentucky, Tennessee, and other southern states to points in the tex-

tile areas of the North. New Bedford, Mass., stores are reported to be collecting signatures for petitions agreeing not to buy Japanese textiles. Justice Department is looking into possible restraint of trade violations.

TTMA to Try Again. The Tufted Textile Manufacturers Association has been deeded a lot on West Cuyler St., Dalton, Ga., by the First

MERCHANDISING NOTES

Hettrick Mfg. Co. is marketing a portable swimming pool made of nylon fabric, coated with Geon

polyvinyl plastic by Electro Plastic Fabrics, Inc.

Rosendale Rayon Mills, of England, will introduce a range of no-iron cotton prints with a nonstain finish to the American market this fall. The fabrics will be advertised as "Howcol Dependables."

Sanford Carpets have introduced a popular-priced woven carpet containing Metlon metallic yarn.

M. J. Whittall has introduced "Finlandia Area Carpets," designed with a Scandinavian motif, and treated with Mitin mothproofing agent.

American Viscose Corp. has made an advertising appropriation of more than $2 million in support of its "Integrity Tag," which now features compliance with ASA's L-22 End-Use Standards for Rayon and Acetate Fabrics. * * * Avisco's technical service department has developed a semiautomatic wrapping machine for a customer, Henry A. Enrich & Co., for speedy packaging of bulky and irregularly shaped items — in this case garment bags. The machine will be available commercially later.

Donnybrook, Ltd., is featuring a woman's coat of beaver fur fiber and fine-denier Dynel, called "Fur-Nel," and made by Paraco Woolens, Inc. The fabric is said to resemble cashmere.

Huyck's *PRE-CONDITIONED* COMPRESSIVE SHRINKAGE BLANKETS require *LESS BREAKING IN!*

More compressive shrinkage ranges are shattering speed records these days. One of the important reasons why is the greatly increased use of Huyck's *new* Compressive Shrinkage Blankets. Far ahead in design—and pre-conditioned in manufacture—they require less break-in time . . . enable operators to reach normal production capacity *easier . . . faster.*

Also, keep in mind, Huyck's *new* Compressive Shrinkage Blankets have many other *plus features*—all adding-up to big savings in costly re-processing . . . machine adjustment time . . . and overall shrinkage cost. You're invited to prove it . . . today.

F. C. HUYCK & SONS

FIRST IN QUALITY . . .
FIRST IN SERVICE
Established 1870
Rensselaer, New York

KENWOOD TEXTILE PRODUCTS

A Product of the Huyck Industrial Fabrics Development Program

National Bank of Dalton as a site for its national headquarters building. The lot is in front of the home of Mrs. Catherine Whitener, who is credited with founding the tufted textile industry in 1895. This will be TTMA's third attempt to build in Dalton; because of zoning problems, the association has twice given up plans to build in residential sections of the city [see TEXTILE INDUSTRIES for June, 1956, p. 176; and July, 1956, pp. 67 and 69].

AF Releases Parachute Data. Two reports of research conducted on parachute materials at textile schools for the U. S. Air Force have

been released through the Office of Technical Services. "Handbook of Parachute Textile Materials and Properties," PB 121100, by J. W. McCarty, Georgia Institute of Technology, covers basic physical properties determined in several research projects. "Evaluation of Antistatic Agents on Nylon Parachute Cloth," PB 121141, by J. W. Sweeney, Lowell Technological Institute Research Foundation, covers research on the subject indicated by the title. Available from OTS, U. S. Department of Commerce, Washington 25, D. C. Price: $4.50 and $2.00, respectively.

Futures Trading Declines. Activity in the cotton futures markets, primarily on the New York and New Orleans cotton exchanges, for the fiscal year ending last June 30 declined to the lowest level in 10 years, according to the U. S. Department of Agriculture. The volume on all markets was 39.6 million bales, compared with 50.4 million bales in 1954-55.

LTI to Celebrate Perkin Centennial. A three-day celebration in honor of the Perkin Centennial will be held at Lowell Technological Institute at the beginning of the next academic year, Sept. 26-28. A lecture and display of rare books, dedication of a new building on the campus, and an open house will be featured.

News in Brief

More Promotion for Wool. The Wool Bureau announces that the next 12 months will see the largest and most thoroughly integrated

program of promotion, advertising, and research in behalf of wool in history. More segments of the wool industry than ever before are supporting the program.

PENSION & PROFIT-SHARING PLANS

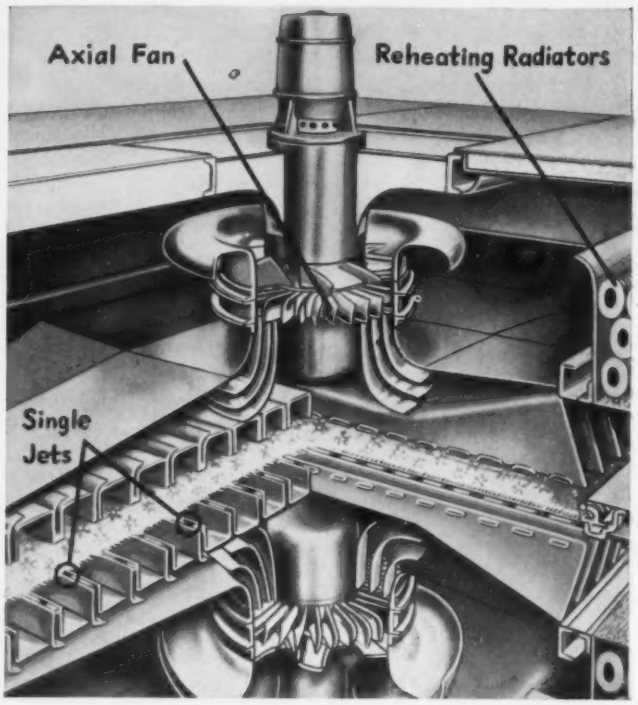
Serving businesses large and small since 1891

TRUST COMPANY OF GEORGIA
ATLANTA

Faster, More Efficient Drying

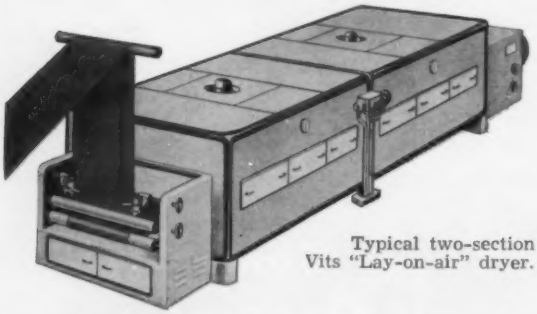
Now Possible with

VITS "Lay-on-air" System



A revolutionary design in aerodynamic construction, the Vits single pass, forced convection, "Lay-on-air" system has achieved maximum possible efficiency in the high speed drying of all fabrics. In addition to this combination of speed and efficiency the Vits design provides an internal drying "focus" so well balanced that even the most sensitive fabrics are dried quickly without distortion or mutilation. Direct results to you are increased production and greatly improved quality—balanced by an equally important decrease in specific steam and power consumption and necessary floor space. Ordinary dress weight fabrics, for example, can be run at speeds over 100 yards per minute, or much higher if desired.

In operation the fabric is fed and held by one pair of rollers at each end of the dryer, and floats free and tensionless between two, high speed, balanced blower systems. There is no mechanical suspension, no injurious contact with internal hot surfaces. The drying medium mixture of steam-air at 300 to 400°F. is vented perpendicularly against the fabric by single jets. Such a mixture provides excellent protection against high temperatures and results in an extremely soft finish, especially with wool fabrics. The right-angle contact creates a much higher evaporation rate and destroys insulating dead air zones. Higher temperatures are also possible with the Vits dryer—permitting curing, heat setting, polymerizing and other finishing processes such as direct dyeing in one pass.



Typical two-section Vits "Lay-on-air" dryer.

- *Evaporative capacity up to 90 lbs. water per sq. yd. of dryer area per hour.*
- *Specific steam consumption of 1.4 lbs. per lb. of water evaporated.*
- *Excellent insulation against incidental thermal loss.*
- *Impeller efficiency of 88%.*

Write for further information.

COSA TEXTILE DIVISION

Lay-on-air & Tenter Dryers, Padders & Other Finishing Mach. · Spindles · Roller Bearing Inserts · Automatic Moisture Control & Others

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AN EXECUTIVE *Views*

THE NEWS IN TEXTILES

We need a "Made in America" campaign

IT'S THOUGHT provoking. But it seems that every time I inspect a Japanese import—especially textiles—whenever I have the opportunity to browse through retail stores, it appears that the lettering stamp—*Made in Japan*— is getting smaller and smaller, while allowable quotas apparently go higher and higher. The lettering, of course, is always stamped in an inconspicuous place and the roving eye, often as not, fails to discern it.

Some courts, especially the federal, may challenge the legality of laws already promulgated, or in the process of being enacted by states and communities at the municipal or county levels, requiring retail stores selling foreign goods, especially Japanese, to post adequate signs in store windows for Mr. and Mrs. John Q. Public's attention before they enter, either to browse or buy.

We who have more than a passing interest in textiles, should examine such laws or proposals with cold scrutiny for possible reactions. Such laws are bound to raise the collective ire of retail merchants, who instinctively dislike any law of a restrictive nature. Pointedly, these measures are aimed at Japanese textiles, but I personally believe that any lengthy controversy over them will only heighten Mr. and Mrs. John Q. Public's interest into something in which we should strive to lessen their interest, namely: the purchasing of Japanese textiles.

Constant publicity may produce the opposite effect from the one we desire; and, whether we like it or not, Japanese products have received more free publicity from those who deplore their low, almost cut-throat competition, than from the wholesalers and retailers who buy and sell their products. True, the publicity is not designed to help Japanese products to sell—far from it. The danger lies in keeping the word "Japanese" constantly in the public mind and neglecting to emphasize goods—textiles—*Made in America.*

And that's the thought that is provoking. I think we've been putting the cart before the horse where publicity is concerned, favorable or otherwise. It is time for a patriotic resurgence of *Made in America* textiles.

MANY TEXTILE EXECUTIVES must wonder just how large the Japanese textile quotas actually are. The Department of Agriculture controls these quotas, and our policy of freer world trade would tend to increase these quotas instead of decreasing them. The outlook is frightening indeed when a news item such as the following is published:

> The Japanese Government announced that further restrictions will be placed on the export of cotton blouses to the United States. The decision is based on increasing stockpiles in the U. S.

You can bet your last bottom dollar they are not referring to American stockpiles! The irony of this situation lies in the stark fact that with our country literally saturated with Japanese textiles, they are allowed to stockpile cotton goods—and thus be able to quickly replenish supplies at the retail level.

I believe we must bring home to every American citizen and his family, to every wage earner, why it is vitally necessary to purchase *Made in America* textiles. When the purchasing power of any segment or group of industrial workers is seriously curtailed due to lay-offs, enforced long vacations, or even permanent plant shutdowns—as we have witnessed in the textile industry—production must of a necessity be directly curtailed in affiliated industries and subsidiaries. This chain reaction in the present textile crisis is mainly caused by policies detrimental to the industry as a whole.

No, I wouldn't recommend decreasing Japanese textile import quotas. I would go a step further—I'd ban them entirely! There is an old saying—to use a vernacular expression of the times—we need them like "a hole in the head." There are very few nations in the world today which would allow the importation of any commodity that would seriously impair one of their basic industries. And there is nothing "free" about a freer world trade that is not only not competitive, but actually strangling if it is a one-way street.

I say "not competitive" literally. Imposing high tariffs on imported textiles doesn't shape up as the answer either. Our give-away program, under the guise of economic aid to "have-not" nations, simply means that, through one device or another, it is possible for a manufacturer of textiles to circumvent high tariffs, sell for a loss if he has

to, and petition his government to replace his losses, including loss of profits—with Uncle Sam probably footing the bill, unknowingly or not.

And, lest we forget, collectively *we* are Uncle Sam. It is also well known that other nations, not recipients of our largesse, encourage their textile exporters to sell for a loss if they have to, and make up such losses in their own currency in exchange for American dollars received in all such transactions. Dollar credits are still the most important money credits in the world today.

NOT MUCH HELP can be looked for from our government on tariffs and quotas, apparently. We haven't a powerful textile lobby in Washington. If any of the textile associations have, they must be hiding out in Baltimore. But there is one thing that the American Cotton Manufacturers Institute, the National Association of Cotton Manufacturers, and the other associations can and should do—and that is to spearhead a drive that will make all America conscious of *Made in America* textiles—point up what it means and how vital it is for every American citizen to buy *Made in America* clothing. We do not need any new laws for that!

It is depressing that too many of our administration officials and legislators have little or no concept of what the textile industry is going through today. When the foreign aid bill was being thrashed out in Senate Committee, one senator from New England proposed an amendment to set quotas on Japanese textile imports. These imports are wreaking havoc with New England mills, with southern mills, and with mills in other sections of the nation, he said.

But the senator's proposal did not impress one government official. His comment on the proposed amendment was:

> Imagine, this amendment would stop the entire foreign aid program because of a couple of lace mills up North!

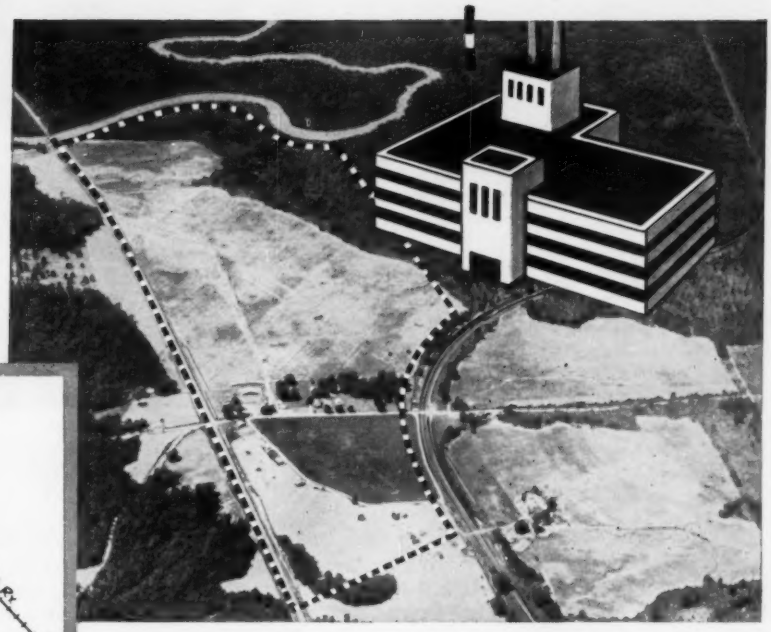
Whatever one may think of the foreign aid program is another matter, but the latter part of this official's statement—"because of a couple of lace mills up North"—is a matter that textile leaders throughout this nation should consider seriously. It implies contempt, ridicule, or just plain ignorance of the textile situation.

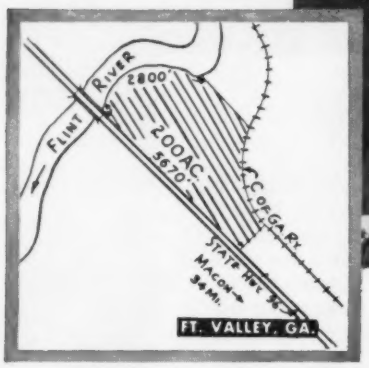
Then listen to what a brother senator, an administration supporter, said of the proposed amend-

(Continued on page 161)

Date		Event	Location
Sept.	6-7	The Fiber Society, Inc.	The Warwick Hotel New York City
	10-15	Perkin Centennial	Waldorf-Astoria New York City
	13-15	American Association of Textile Chemists and Colorists annual convention	Waldorf-Astoria New York City
	22	Southeastern Section AATCC	Hotel Ralston Columbus, Ga.
	27-28	Combed Yarn Spinners Association convention	Cavalier Hotel Virginia Beach, Va.
	27-28	Northern Textile Association and National Association of Cotton Manufacturers annual meeting	Wentworth By-The-Sea Portsmouth, N. H.
	27-28	Textile Quality Control Association fall meeting	Sedgefield Inn Greensboro, N. C.
	28	Northern New England Section AATCC annual outing	Waschusett Country Club West Boylston, Mass.
	28	Philadelphia Section AATCC	Abraham Lincoln Hotel Reading, Pa.
Oct.	1-5	Southern Textile Exposition	Textile Hall Greenville, S. C.
	3-4	Chemical Finishing Conference	Hotel Statler Washington, D. C.
	6	Piedmont Section AATCC	Hotel Charlotte Charlotte, N. C.
	10-12	North Carolina Textile Manufacturers Association annual meeting	The Carolina Pinehurst, N. C.
	13	Georgia Slashing, Weaving, and Maintenance Discussion (TOE)	Georgia Tech Atlanta, Ga.
	15	Western New England Section AATCC	Hartford, Conn.
	16-19	ASTM Committee D-13 on Textiles	The Warwick Hotel New York City
	17-27	International Knitting Machinery & Accessories Exhibition	Granby Halls Leicester, England
	18	Rhode Island Section AATCC	Johnson's Hummocks Grille Providence, R. I.
	18-19	Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
	22-26	44th National Safety Congress and Exposition	Conrad Hilton Chicago, Ill.
	27	Alabama Textile Operating Executives fall meeting	Thach Auditorium Auburn, Ala.
Nov.	27-30	National Chemical Exposition	Public Auditorium Cleveland, Ohio
Dec.	1	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
1957			
Jan.	28-29	National Cotton Council annual meeting	St. Louis, Mo.
Feb.	25-27	Textile Quality Control Conference	Georgia Tech Atlanta, Ga.
	27-28	Cotton Research Clinic, sponsored by National Cotton Council	Gen. Oglethorpe Savannah, Ga.
Apr.	4-6	American Cotton Manufacturers Institute annual meeting	Biltmore Hotel Palm Beach, Fla.
	23-24	National Knitted Outerwear Association annual meeting	Waldorf-Astoria New York City
	29-May 2	Knitting Arts Exhibition	Auditorium Atlantic City, N. J.
May	1-2	Fiber Society spring meeting	Clemson House Clemson, S. C.

Get the JUMP on Competition





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Cut distribution costs and increase profits—build *your new plant* on this ideal site at Fort Valley, Georgia.

- 200 acres of level terrain adjacent to Central of Georgia Railway, situated in the heart of a thriving market of 22 million people.
- Located six miles west of city limits of Fort Valley, 34 miles from Macon.
- 2,800 foot frontage on Flint River.
- Minimum flow at site 193,881,600 gallons per day.
- Also ample underground water supply.
- Advantageously located for textile and chemical plants or other industries requiring large amounts of water.
- Fast, reliable daily freight service via Central of Georgia Railway connecting directly with 15 major railroads and Seatrain at Port of Savannah.
- 5,670 foot frontage on State Highway 96, which connects with U. S. Highways 341 and 19.
- Population of 89,978 within 25-mile radius.

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This site is adaptable to almost any type of industry. *Investigate* by writing, in strict confidence, for maps and complete data. The Industrial Location Specialists of Central of Georgia will gladly work with you on your re-location problems.

FREE 32-PAGE BROCHURE describing this and other desirable river sites will be sent on request.

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1212 Rhodes-Haverty Building—Atlanta 3, Georgia

I'm interested! Rush me a copy of your FREE 32-page brochure right away.

Name_____ Title_____

Company_____

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City_____ State_____

Inside story:

Valves may look alike on the surface. Their performance is another story. And the inside story of Powell Valves is that *every* Powell Valve has *Performance Verified.*

X-ray and gamma ray inspection—examining the very structure of the metal itself—are two of the many ways that Powell can make absolutely certain that Powell Valves will give *dependable* flow control.

Every part of every valve must pass rigid inspection. As a final step in manufacture, every Powell Valve is subjected to *an actual line test.* Because of Powell's pains-taking quality control, valve repair is cut to the minimum and plant shut down through valve failure is substantially reduced. Records from refineries, power and industrial plants the world over prove it.

Consult your Powell Valve distributor. If none is near you, we'll be pleased to tell you about our COMPLETE *quality line* which has PERFORMANCE VERIFIED.

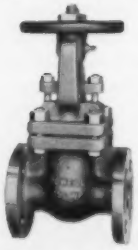
The Wm. Powell Company, Cincinnati 22, Ohio . . . 110th YEAR

PERFORMANCE PV VERIFIED

FIG. 1793—Iron Body Bronze Mounted O. S. & Y. Gate Valve for 125 Pounds W.S.P.

FIG. 2608—Bronze Full Flow Globe Valve for 200 Pounds W.S.P.

FIG. 2491—Stainless Steel O.S. & Y. Gate Valve for 150 Pounds W.P.



POWELL VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES.

The Perkin centennial and AATCC convention

THE YEAR 1956 marks the one-hundredth anniversary of the discovery of the first synthetic dyestuff — mauve — by William Henry Perkin. The far-reaching consequences of this discovery were barely realized at that time, but it actually proved to be the cornerstone on which the existing dye industry is built. It also stimulated creative thinking in a new field which has resulted in the development of countless chemicals and intermediates that are today widely used in industry.

The event is being honored by a celebration during the week of September 10, at the Waldorf-Astoria Hotel in New York City, sponsored by the American Association of Textile Chemists and Colorists.

Twenty-seven leading technical, chemical, and scientific societies concerned with the manufacture or application of color, and two U. S. Government Departments are taking part in the celebration. Renowned scientists and others from many parts of the world and different branches of the chemical industry will discuss during that week the significance of this "more colorful world," which is the overall theme of Perkin Centennial Week.

The annual AATCC convention is a part of the Centennial Week and will be held September 13, 14, and 15.

International Day will open the Centennial on Monday. Speakers from Canada, England, France, Germany, Switzerland, and the United States will discuss "Colorfastness of Textiles" at the morning session, and the life and work of Sir William Perkin will be the subject of a luncheon address by Sir Robert Robinson, Nobel Prize winner.

The afternoon session, under the auspices of the American Standards Association and the International Organization for Standardization, will have as its theme "Color—The Catalyst of Commerce." Leaders in the fields where color is important will take part in a round-table discussion.

(Continued next page)

Sir William Henry Perkin—Founder of an Industry

The discovery of mauve, the first synthetic dyestuff, was accidental in that its discoverer was at the time engaged in research with quite a different aim. But although the correct mixture of chemicals occurred by a fortunate chance, the ability to recognize the importance of the discovery and the foresightedness to exploit it were anything but accidental.

William Henry Perkin, whose chemical experiments as a boy of 18 led to the founding of the modern dyestuffs industry, was born in London in 1838. Against the advice of his father he decided to become a chemist, and at the age of 15 he entered the Royal College of Chemistry, where he studied under Hofmann, the celebrated German chemist.

By the time Perkin was 17 he had completed the standard course in chemistry, and had started research work under Hofmann. He also had a laboratory of his own at home, where he did work in the evenings and on holidays.

National Portrait Gallery, London

One of Perkin's own projects was an attempt to synthesize quinine. In one experiment conducted during the Easter vacation of 1856, Perkin treated aniline sulfate with potassium bichromate, which formed a dark-colored precipitate. When this was dissolved in alcohol, Perkin noted that a purple or violet coloration was formed.

Perkin found that the substance would color silk, and later in the same year he obtained a patent on his process.

Unlike many inventors, Perkin had the foresight and business acumen to capitalize on his invention. He went into business with his father and his brother as the world's first manufacturer of synthetic dyestuffs. New dyes were developed, the business prospered, and Perkin later scored another first when he formed with a German firm, Badische Co., the earliest known example of a dyestuffs cartel.

Perkin Centennial Textile Program

The Waldorf-Astoria, New York, N. Y., September 10-15, 1956

Monday, September 10—International Day

9:30 A.M. Empire Room

"Colorfastness of Textiles"

"A Century of Progress in Colorfastness Test Methods"
M. L. Staples, Ontario Research Foundation

"Current Developments in Colorfastness Testing"
In France—J. P. Niederhauser, Cie. Fr. des Mat. Colorantes
In Germany—Paul Rabe, Farbenfabriken Bayer AG
In Switzerland—Henry Ris, J. R. Geigy SA
In the U.K.—P. W. Cunliffe, British Cotton & Wool Dyers
In the U.S.A.—Charles A. Sylvester, Du Pont Co.

12:15 P.M. Starlight Roof

Luncheon Session

"Sir William Perkin—His Life and Work"
Sir Robert Robinson, Society of Dyers & Colourists

"Color—The Catalyst of Commerce"
Panel Discussion

Tuesday, September 11

2:00 P.M. West Foyer

"The Physics of Color"

"Color Control—Twenty-Five Years Progress"
Frank J. O'Neill, Pacific Mills

"Progress in Measuring Color Differences"
G. W. Ingle, Monsanto Chemical Co.

"Color in National Defense"

"Color in National Defense"
Stephen J. Kennedy, Quartermaster Corps, U.S. Army

"The Impact of Synthetic Dyes on Our Economy"

"The Impact of Synthetic Dyes on Our Economy"
Charles C. Concannon, U.S. Department of Commerce

Wednesday, September 12

9:30 A.M. Starlight Roof

"The Psychology of Color"

"Description of Color"
Deane B. Judd, National Bureau of Standards

"Seeing Light and Color"
Ralph M. Evans, Eastman Kodak Co.

"Color in Industrial Design"
Walter C. Granville, Container Corp. of America

"Color Harmony from Fashion to Industry"

"Color Harmony from Fashion to Industry"
John F. Warner, D. B. Fuller & Co.

"The History of Color"

"Color in Relation to the Political and Economic History of the Western World"
Sidney M. Edelstein, Dexter Chemical Co.

"Color in Ancient Times"
Earle R. Caley, Ohio State University

Thursday, September 13

9:30 A.M. Empire Room

"The History of Dyeing"

"The Development of Fast Colors for Textiles"
F. M. Fordemwalt, American Cyanamid Co.

"The Development of the Art of Textile Printing"
Herman P. Baumann, American Aniline Products

"The Development of Modern Textile Dyeing Techniques"
Paul Meunier, Du Pont Co.

2:30 P.M. Empire Room

"The Application of Colorants to Textiles"

"The Application of Colorants to Glass Fibers"
R. T. Carosella, Owens-Corning Fiberglas Corp.

"Internal Application of Color in the Manufacture of Man-Made Fibers"
C. E. Coke, Courtaulds Ltd.

"Improvements in Dyeing Cotton with Sulfur Colors"
John Christ and Raphael Rupp, Southern Dyestuff Corp.

Friday, September 14

9:30 A.M. Grand Ballroom

"The Chemistry of Synthetic Dyes"

"Early Synthetic Dyes"
Hans Z. Lecker, Consultant

"Dyes for Cotton"
W. W. Williams and D. L. Randall, General Aniline & Film Corp.

"Dyes for Animal Fibers"
James Ogilvie, National Aniline Division

2:00 P.M. Grand Ballroom

"Dyes for the Hydrophobic Fibers"
H. F. Schroeder and S. N. Boyd, Du Pont Co.

"Fluorescent White Dyes"
Mario Scalera, American Cyanamid Co.

Saturday, September 15

9:30 A.M. Grand Ballroom

"Theories of Dyeing"

"The Theory of Dyeing Natural and Synthetic Polyamide Fibers"
Milton Harris, Harris Research Laboratories

"The Theory of Dyeing Cellulosic Fibers"
Emery I. Valko, Onyx Oil & Chemical Co.

"The Theory of Dyeing Polyacrylic and Polyester Fibers"
W. R. Remington and H. F. Schroeder, Du Pont Co.

2:00 P.M. Sert Room

AATCC Intersectional Contest

Technical papers will be presented by the Hudson-Mohawk, Midwest, New York, Northern New England, Pacific Southwest, Philadelphia, Piedmont, Rhode Island, South Central, South Eastern, and Washington Sections of the American Association of Textile Chemists and Colorists.

THE OLNEY MEDAL award luncheon will be held at noon on Thursday, September 13, first day of the annual AATCC convention. This year's winner of the medal, the AATCC's highest award, is Dr. Walter J. Hamburger, director and treasurer of Fabric Research Laboratories, Dedham, Mass., who will receive the Olney Award for "outstanding achievement in the field of textile chemistry."

THE PERKIN MEDAL of the American Section of the Society of Chemical Industry will be presented at a dinner on Friday evening, September 14, to Dr. Edgar C. Britton of the Dow Chemical Co. The medal was first presented in 1906 to Sir William Henry Perkin.

Guests at this dinner will wear dress ties in Perkin mauve.

THE ANNUAL AATCC banquet will be held at 7:00 P.M. on Saturday, September 15, in the Grand Ballroom of the Waldorf-Astoria.

This year's Olney Medal, highest award of the AATCC, will be presented to Dr. Walter J. Hamburger, director and treasurer of Fabric Research Laboratories, Dedham, Mass., for "outstanding achievement in the field of textile chemistry."

This affair always serves as a meeting place for members of the textile wet processing industry who rarely get together at other times. This year it has added significance because of the cross section of interests represented by the members of the Societies participating in the Perkin Centennial.

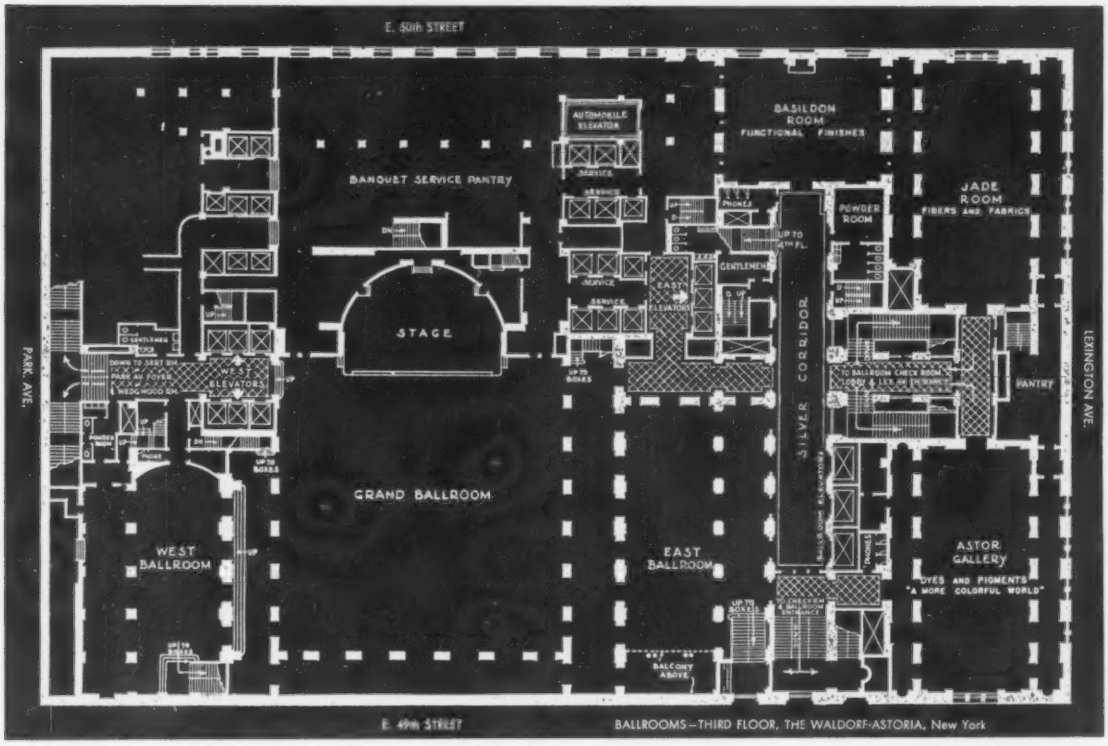
THE INTERSECTIONAL contest will be held this year on the Saturday afternoon of Centennial Week. Ten local sections of the AATCC will participate, which will make this year's contest the largest yet.

The names of the winning section and the runners-up will be announced Saturday evening at the annual banquet.

COLOR EXHIBITS following the theme "A More Colorful World" will be staged on the ballroom floor of the Waldorf-Astoria during Centennial Week.

Location of Perkin Centennial Exhibits and Principal Technical Sessions

The Waldorf-Astoria, New York, N. Y., September 10-15, 1956



In the Astor Gallery will be an exhibit sponsored by the manufacturers of organic dyestuffs. It will be historical and educational in nature and will depict the story of dyes—where they originate and what they mean to our national and industrial economy. The scarcity and high cost of the dyes available from nature will be pointed up, highlighting the importance of the discovery of mauve.

In the Jade Room manufacturers of fibers will display "A Galaxy of Fibers and Materials." Exhibits of natural and synthetic fibers will provide an educational counterpart to the dyestuffs exhibit, and will clearly depict the close relationship between dyes and textiles.

In the Basildon Room a display will center upon the functional finishes that help to make colored textiles practical and beautiful by imparting desirable properties and characteristics that are sought by the consumer.

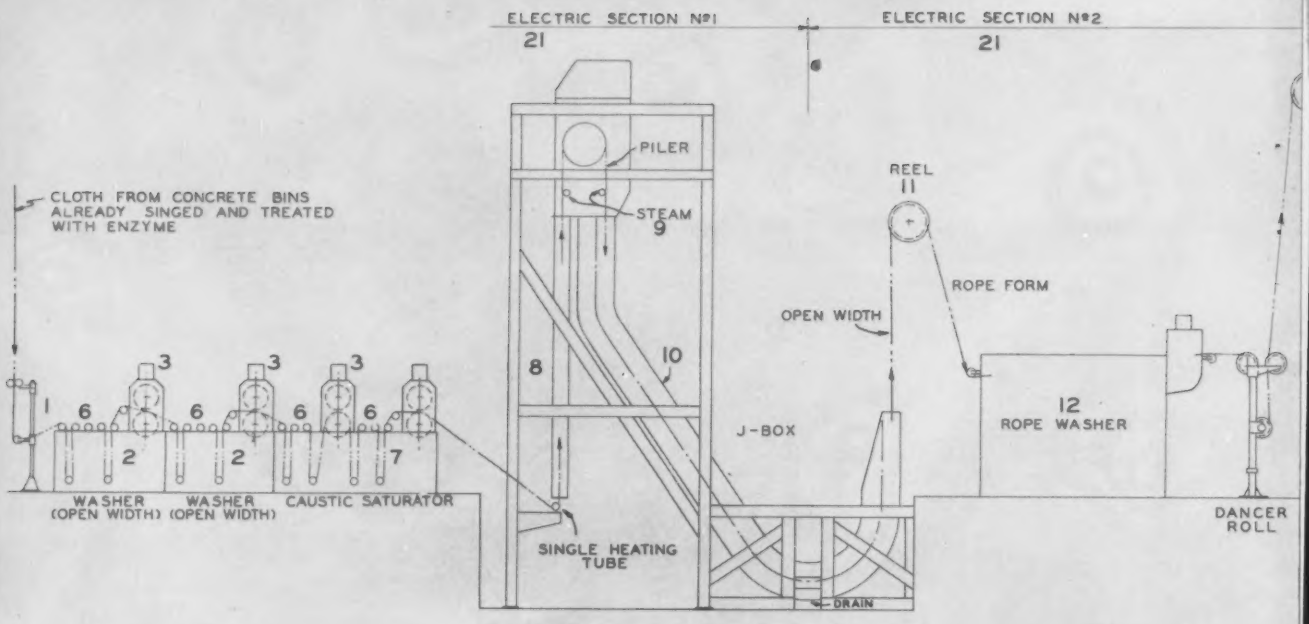
Probably one of the last times that Perkin's mauve was used commercially was for the ink used in printing this one-penny lilac English stamp, issued in 1881.

A fourth exhibit, in the area beside the entrance to the Grand Ballroom, will be a special display featuring colorfastness testing equipment and methods developed by AATCC for the benefit of the industry and of consumers.

During the Perkin Centennial, the Kodak Photographic Information Center in Grand Central Terminal will be devoted to an exhibit showing the application of modern color photography in the "more colorful world" of today and tomorrow. Also on display will be products illustrating the use of dyes in the manufacture of the newest in modern plastics and textile fibers.

ENTERTAINMENT during the Perkin Centennial celebration will include trips to radio and TV shows, discount-rate trips to many of the sightseeing spots in and around New York, and theater parties to current Broadway hits.

ALL PAPERS presented as a part of the Centennial will be published later in one volume entitled "The Proceedings of the Perkin Centennial." All registrants will receive a copy.



Russell's new bleach range

This mill saved $33,000 *by combining open width and rope bleaching*

Staff prepared
Exclusive

A COMBINATION open width and rope continuous bleaching range for processing woven goods has been installed by the Bleachery Division, Russell Manufacturing Co., Alexander City, Ala.

An open width range is normally required to process heavy materials that have a tendency to form permanent cracks and creases when they are handled in rope form. Since a completely open width range is more expensive and requires more space than a rope range, the mill personnel who engineered the range decided to incorporate tension controlled rope washers after each steaming operation. Results have proved their judgment sound.

A space saving of about 35 feet and an equipment saving of about $33,000 resulted from their decision.

The range is geared to operate at 200 yards per minute, but Russell normally processes the cloth at from 100 to 150 yards per minute, depending on the weight of the fabric.

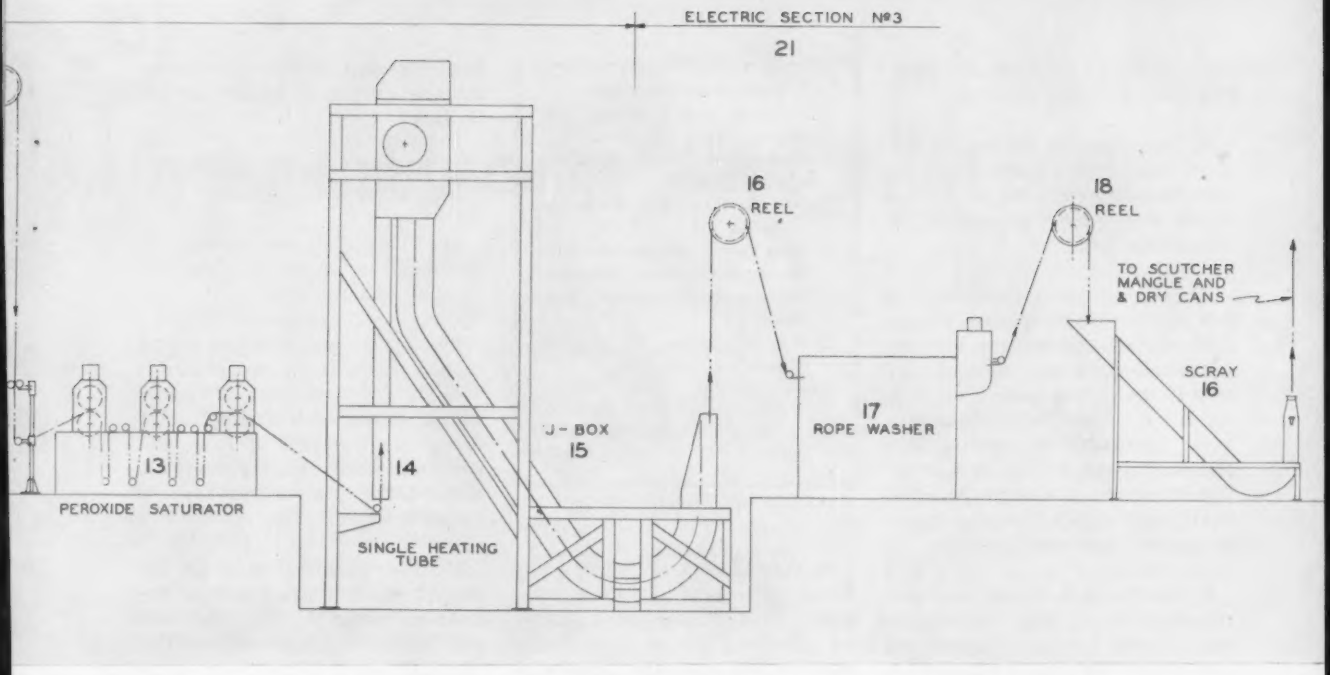
Unique features of the range at Russell are highlighted in the accompanying flow plan and photographs (numbers on sketch and pictures are explained in the text).

1. The cloth moves from concrete bins to the range. The fabric has first been singed, enzyme desized, roped, and allowed to lie in the bins for several hours before entering the range. From the bins, the goods are opened through an overhead scutcher.

2. The first two wash boxes handle the goods in open width. Counter-current water flow and good extraction at the exit end of each tub insure efficient washing. The entire range is of stainless steel construction, except for the pillow blocks and pressure cylinders.

3. The bearings are sealed so that no water or liquor from the wash boxes will get into the bearings and so that no grease from the bearings will get onto the cloth. High pressure lubrication is used. The design on the boxes and the placement of the bearings are such that the range, the fabric, and the floor can be kept clean.

4. A slinger on the journal of the top rubber covered roll keeps liquor out of the bearings and di-


ELECTRIC SECTION Nº3
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16
REEL
18
REEL
TO SCUTCHER
MANGLE AND
& DRY CANS
SCRAY
16
17
ROPE WASHER
J - BOX
15
13
14
PEROXIDE SATURATOR
SINGLE HEATING
TUBE

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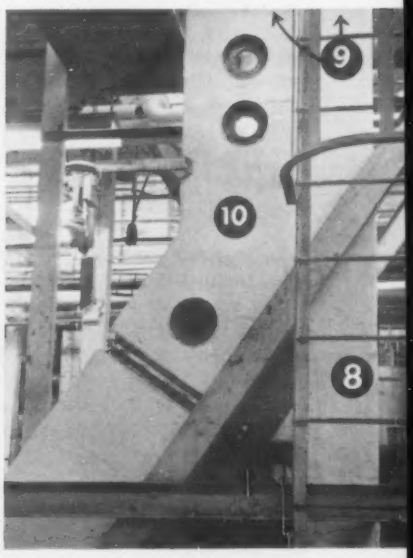
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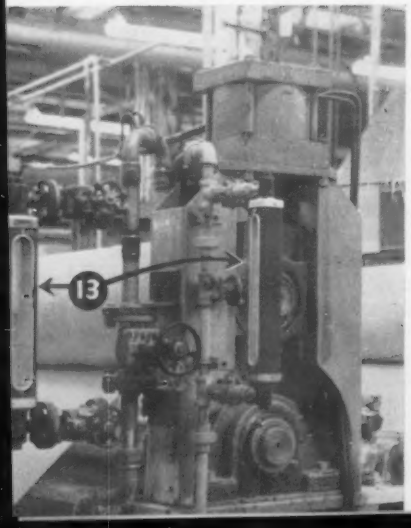
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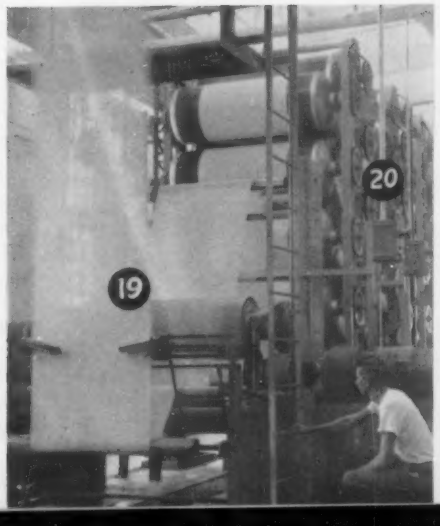
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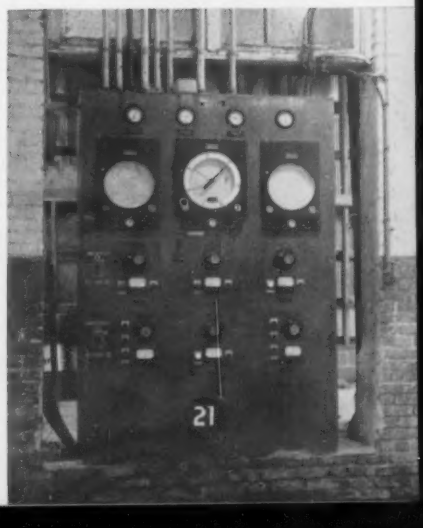
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rects the liquor back into the wash box instead of onto the floor.

5. The slinger on the bottom roll is provided with a cover so that no foreign matter will get on it; this serves as a further protection for the rubber rolls.

6. An electrical mill-made stop motion has been applied at the rolls on the wash boxes so that the section of the range involved will stop if the fabric breaks, or runs too slack or too tight. This prevents the cloth from running free and losing the end in the J-box. The stop motion also protects the bearings and rolls should a wind-up place undue strain on them.

7. The two-roll caustic saturator retains the mechanical features already listed for the wash boxes. Liquor for this box is mixed in a large stainless steel tank and flows by gravity to the box (note that the liquor for the next saturator is handled differently). The pressure of the exit squeezer can be easily regulated so that the cloth will carry the correct amount of moisture, which is normally 100 per cent.

8. Only one heating tube is used prior to the J-box. The cloth enters at the bottom of the heating tube, which has an 8″ x 50″ cross section and is about 12 feet long.

9. Steam for the heating tube enters at the top. The purpose in designing the range with the one heating tube and steam entering at the top is to keep the cloth hot in the J-box. The cloth is heated before piling, and so uniform heating of all weights and constructions is assured. With this new type of arrangement for the steam, only one heating tube is necessary; the steam supply is moved closer to the body of the J-box so that heating in the J-box will be more effective. The single tube makes reduced cloth tension possible, because of lower steam velocity and a shorter tube length than previously employed.

10. The J-box is of simple design and occupies a minimum amount of floor space. It is 50″ wide, has an over-all height of 24 feet, and has a capacity of approximately 2800 lb, based on a steaming cycle of about an hour. Stainless steel is used for cleanliness and resistance to corrosion. Sight glasses on each side of the J-box show the position of the material so that the operator can keep it at the proper height.

Equipment Suppliers

Continuous bleach range: The Wiesner-Rapp Co., Inc.
Rubber rolls: North Carolina Rubber Hose Co.
Drives: Reliance Electric & Engineering Co.
Control panels and instruments: Brown Instruments Division, Minneapolis-Honeywell Regulator Co.
Drying can section: H. W. Butterworth & Sons Co.
Pipe, fittings, and valves: Crane Co. and J. M. Tull Co.
Flow meters: Fischer & Porter Co.

11. From the first J-box, the goods pass over a reel . . . .

12. . . . . then go into rope form to be processed in the rope washer. The rope washer is used to save floor space and to reduce capital outlay. The cloth makes 48 dips, with flow (controlled by meter) of the water being from back to front for maximum effectiveness. Upon leaving the washer, very little squeeze (20 lb) is used, so no creases are in the cloth. The top rolls in the rope washer are positively driven; a variable speed attachment regulates the tension. After leaving the rope washer, the goods are again processed in open width.

13. Liquor for the peroxide saturator is kept in separate tanks, and flows to the box in separate lines, the mix taking place at the saturator. Two flow meters are used for control of the sodium silicate and the peroxide. Chemical control is still by titration, but flow is adjusted and kept as set by the flow meter.

14 (Single heater tube), **15** (J-box), **16** (reel), and **17** (rope washer) are similar to operations described.

18. Goods pass in rope form from washer into a scray.

19. They then go through a scutcher (not shown in diagram), through mangle, and . . . .

20. . . . . through a 40-can drying section which is driven by double V-belts. The first stack of cans is Teflon coated. An individual motor drives each section of cans, but synchronization is not difficult because there is an idling can between driven can stacks.

21. Two panels contain all the control instruments, some of the electric motor control rheostats and ammeters, tachometers, and various gauges. Steam flow is recorded, steam pressure is controlled and recorded, wash water flow and temperature are controlled and recorded, and J-box temperatures are controlled and recorded by automatic instruments.

For better operation the electrical hook-up is in three sections:

1st section: the first two open width washers, the caustic saturator box, and the first J-box.

2nd section: reel, rope washer, peroxide saturator, second J-box.

3rd section: reel, rope washer, reel, mangle, and dry cans.

The motors are not automatically synchronized for cloth delivery because scrays are between electrical hook-up sections; adjustment is manual by use of a master rheostat for each section.

Where there is need for tension control of the cloth from nip to nip (e.g., between washer and peroxide saturator), a dancer roll is used.

The electrical control set-up is so arranged that when the "stop" button is pushed, the range is automatically decelerated. There are emergency stop buttons which when pushed stop all motors instantaneously. When the "start" button is pushed, the acceleration is also automatic. The operator does not have to push one button to start and then adjust a rheostat to accelerate.

Dyeing and finishing stretch nylon

by Joseph L. Wauters
Superintendent of Dyeing
Garnet Hosiery Dyers & Finishers
Exclusive

THE information given represents present knowledge but it should be noted that continuing experiments and development of further data in the dyehouse may result later in changes in these recommendations. This is especially true with regard to techniques of heat treating, temperatures, dyeing and finishing ingredients, and procedures required to give the hosiery optimum stretch and hand.

Chadelon. The following conditions of temperature are suggested: Scouring, 180 F; dyeing, 140-160 F; presetting, 210 F wet bulb for 1 hour, 170 F dry bulb for 15 minutes.

Helanca. This yarn, mostly used in heavier hosiery in either 20-denier or 2-ply, 20-denier form is preboarded, scoured, and dyed as is conventional for nylon. Special boarding forms are used.

Agilon. The stretch of hosiery containing Agilon is developed in the scouring before preboarding. Scouring chemicals are added at 80 F and the bath is run for 30 minutes, raising to 175 F in 20 minutes (5 degrees per minute); scouring is followed by a rinse, light extraction, and preboarding.

Gro-Lon. Relaxing of stretch hosiery is desirable if it is to be preboarded. This is done by giving Gro-Lon a short scour to remove coning oils and size. If these are not removed, the yarns may stick together, resulting in a reduction of stretch. The goods should be dried without tension.

Preboarding is carried out at low temperatures with long time cycles or with high temperatures using a short time cycle. However, higher temperatures tend to reduce the stretch characteristic of the yarns.

The setting temperature for Gro-Lon should be at least 180 F (both wet and dry bulb readings).

The procedure cycle includes a 5-minute alkaline (mild) scour at the boil, rinsing, preboarding, scouring, dyeing, and postboarding.

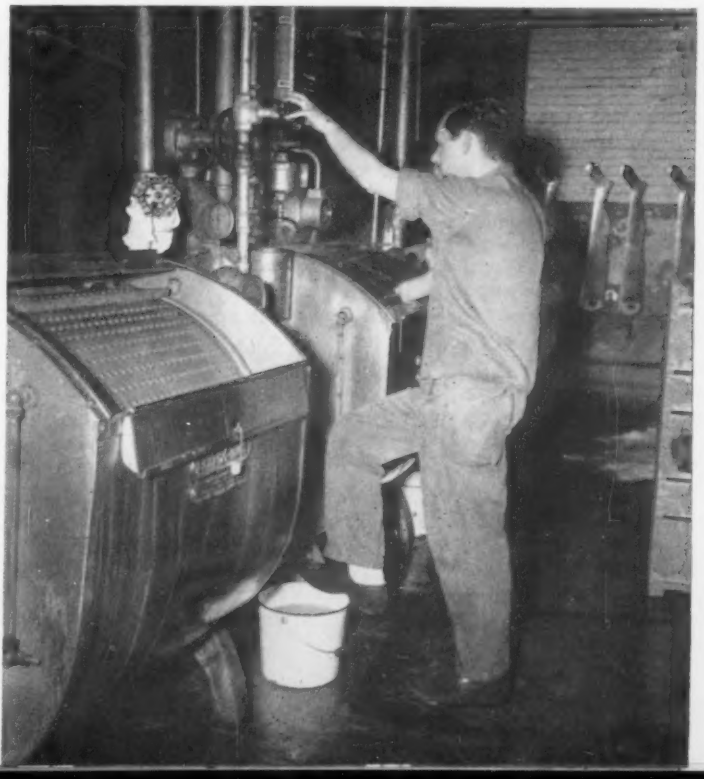
Causes For Scouring Problems. Changes in knitting and throwing to accommodate high torque requirements have caused many of the scouring problems.

In throwing, appreciable increases in the average size content in the nylon yarn have been made. Lots with this size increase can be expected to give more trouble in dyeing and finishing than yarns containing a normal amount of size. Prolonged contact of size and oils with the yarns also increases the problem; the size and oil are on the yarn for weeks before the hosiery reaches the preboarding department and dyehouse. It is also reasonable to assume that at least part of this oil reacts from the heat of preboarding and forms insoluble resins, tending to make the size and oil insoluble.

Competition and introduction of better equipment and finer gauge hosiery have made improved knitting mandatory. Throwsters found that they had to produce nylon with better running properties. Thus, they modified and improved their treatments so that finer yarns could be knitted efficiently at higher speeds. However, an improved throwing treatment from the knitters' viewpoint does not necessarily mean an improved treatment from the dyers' standpoint; it may mean just the opposite.

These improvements for the knitter, by the throwster, have

Scouring is the big problem in processing high torque hosiery. Changes in throwing technology have created a critical dyehouse requirement for a good scouring agent to prevent emulsion "breaking."



Dyeing high torque hosiery is generally carried out with dispersed acetate colors, using normal procedures but with lowest possible temperatures. Here the operative samples a dyeing of stretch nylon hosiery.

been felt in scouring because now less of the scouring is accomplished by the yarn coating itself, and consequently more work must be done by the scouring ingredients.

These problems are born of progress and are unavoidable. However, because of excellent general advances and recent development in scouring materials, it seems logical to look for optimum solution in the utilization of throwing oils and sizes that are free from dyeing problems.

Dyeing High Torque Hosiery. The dispersed acetate dyes have been widely used for dyeing stretch nylon hosiery because they have excellent affinity for the nylon fiber. Their application is simple because the dyes apparently are free to migrate through the fiber, and they possess the desirable property to level or transfer well and to minimize the occurrence of yarn streaks or filling bars caused by slight differences in tension of yarns.

Normal dyeing procedures are recommended, but use the lowest possible dyeing temperatures. The acetate colors are generally dyed on stretch nylon from a dyebath set with soluble oil, detergent, or other dyeing assistants normally used for the dyeing of cellulose acetate rayon.

The goods are entered at 90 F, and the temperature is raised to 140 F or 160 F, depending on whether the depth of color of the boot is migrating to the welt portion of the stretch nylon stocking, or vice versa; this depends on the type of thrown yarn used in the welt and boot. The temperature is raised from 90 F to 140 F - 160 F over a period of not less than 30 minutes, and the dyeing is continued at either temperature for 45 minutes to an hour and sampled for shade.

Dyeing Knee-High Stretch Hosiery. Stretch knee-high hosiery made from nylon and cotton/rayon elastic webbing can be union dyed by applying a combination of acetate and selected direct dyes.

Dyebath use of ½% soap and 10-20% Glauber salt are suitable for the exhaustion of colors. The use of soap or alkali in small amounts in the dyebath which contains both acetate and direct dyes is not detrimental since these agents reduce the dyeing rate of the direct colors on nylon and allow full penetration of seams and selvages with the direct dyes. Also, staining of the nylon by the direct colors is reduced; then, too, a reasonable degree of alkalinity does not affect the dispersion or dyeing properties of the acetate colors on nylon stretch hosiery.

A list of recommended acetate and direct dyestuffs and data as to fastness to light and washing properties can be obtained from any dyestuff corporation.

Finishing. In finishing stretch nylon hosiery, anything that makes for a heavier thread or flattening or distortion of stitch is undesirable. Therefore, the type or quantity of starches, dextrines, waxes, and resins must be adjusted and controlled with extreme care.

Permanent resins can increase the wear and snag-resistance of nylon hosiery, but if resins are used carelessly they will lower the appearance of the fabric and its elasticity. An effective percentage of resins should be used so that it will remain for at least ten washings; then the hosiery should be tested to determine if it actually does increase the wear and snag resistance.

Body or stiffness in hosiery should be sufficient, but not enough to interfere with the yarn pliability and surface lubricity.

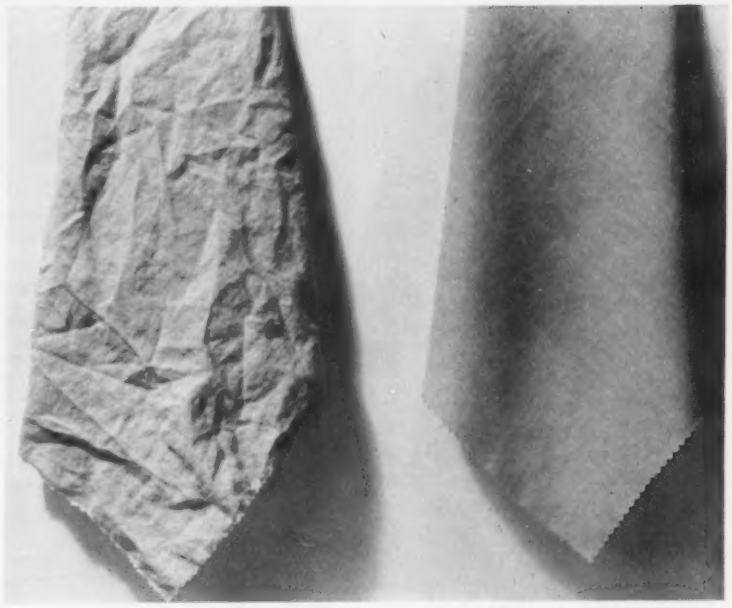
The wear of nylon stretch hose will be increased if the fabric can be kept soft so that shearing action is reduced and sudden strains are distributed over as many loops as possible. Cationic or lanolin type softeners continue to be effective after several washings; waxes and oils are quickly removed.

A combination of cationic and lanolin softeners is therefore recommended for use wherever possible. Specific quantities of adhesives, weighting agents, lubricants, deliquescents, and resins will vary widely, depending on the job to be done, the desires of the finisher, and the equipment available.

Wash-and-wear cottons

New treatment gives superior wrinkle recovery

by Edward Abrams*
Head, Textile Section
Southern Research Institute
Birmingham, Ala.
Exclusive



Wrinkle resistance of cotton chambray fabric. Sample on the right has been treated in the laboratory with urea-formaldehyde and thermoplastic resin by the process developed at SRI. Sample on the left is untreated. Both fabrics have been wrinkled in an identical manner and have been allowed to relax for 24 hours.

CELLULOSIC fabrics have many excellent properties, but they are susceptible to creasing and wrinkling. Cotton garments must be thoroughly ironed after washing. On the other hand, claims are made that synthetic fabrics do not wrinkle or require ironing after washing. To set the record straight, this is true to a degree, but it is still necessary to iron seams, collars, and cuffs.

For some time, it has been known that chemicals such as formaldehyde when properly reacted with cotton result in remarkably wrinkle-resistant fabrics. What to call the improved product has been a problem. At one time the terms "noncrush," "crush-resistant," "anti-crease," and "crease-resistant" were used in connection with the application of synthetic resins to cotton. More recently the terms "wash and wear" and "minimum care" have become popular. None of these is completely satisfactory.

The new property imparted to cellulosic fabrics is a combination of resistance to, and recovery from, creasing. It is now believed that the recovery from creasing or wrinkling is the more important improvement. And, treatments that give good recovery from wrinkling have other advantages, too. Shrinkage during laundering is decreased; the fastness of certain dyes is improved; and the strength of rayons is actually increased.

Despite these improvements, the undesirable effects of formaldehyde-type treatments have held back wider use of wrinkle-resistant finishes for cotton. Formaldehyde, together with urea or melamine, imparts a high degree of crease-resistance to cotton. But, the chemical reaction weakens the fabric, resulting in poor tear strength and low resistance to abrasion. Moreover, treated fabrics retain chlorine, such as is used in laundering, and the fabrics are degraded by the acid that is formed. A hot iron on such a fabric leaves a brown stain.

UNDER THE SPONSORSHIP of the B. F. Goodrich Chemical Co., Southern Research Institute investigated the important property of wrinkle-resistance in cotton. The performance of a fine cotton fabric, treated with a low molecular weight modified urea-formaldehyde, was taken as the starting point. As a result of such a treatment, the fabric lost 70% of its strength, and its resistance to abrasion was reduced by about 80%. But, it had excellent wrinkle recovery. In fact, it recovered from wrinkling 60% better than the untreated fabric. Technically, it had a recovery angle of 146 degrees.

The measurement of wrinkle recovery is rather simple. A small sample of fabric is folded in half and is placed under a standard weight for a standard period of time. Then the fabric is held in a clamp by one fold and the other fold is permitted to relax. After a standard period of time the angle between the two halves of the fabric is measured. This is done conveniently on a Monsanto Wrinkle Recovery Tester.

If the fabric has poor wrinkle recovery, the angle will be small. But, if the fabric has good wrinkle

*Present address: National Cylinder Gas Co., 840 North Michigan Ave., Chicago 11, Ill.

recovery, the angle will be large. For good wrinkle recovery the angle in this test should be at least 120 degrees.

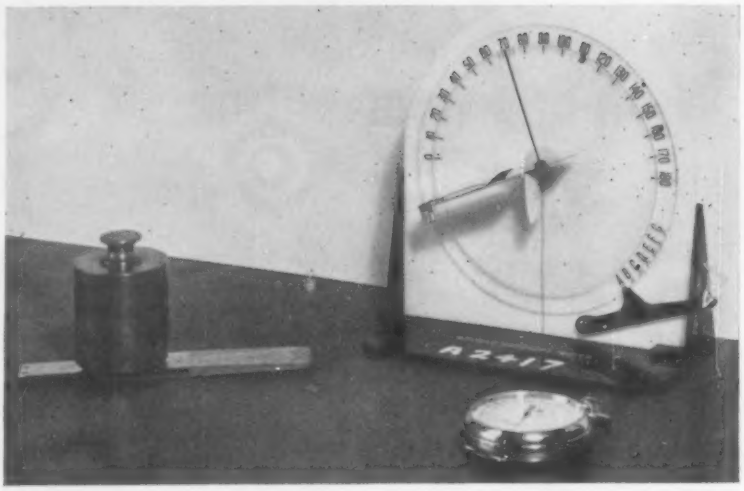
IN AN EFFORT to minimize the undesirable effects of urea-formaldehyde type finishes, the possibility of modifying them with other materials, such as polymeric latices, was investigated. Polymeric latices were selected for this purpose because of the success experienced at Southern Research Institute with acrylonitrile-butadiene latex as a permanent abrasion-resistant finish for cotton fabrics. Also, this material increases tear strength and breaking strength, and results in an improved "hand." These properties are precisely those in which urea-formaldehyde type fabrics are deficient.

It was generally known that effects produced by urea-formaldehyde were proportional to the amount used. High concentration gave excellent wrinkle-resistance and poor breaking strength, tear strength, and abrasion resistance. Conversely, low concentration gave only slight improvement in wrinkle recovery and practically no reduction in other physical properties. Therefore, it was felt that this area of low concentration was a good one for research.

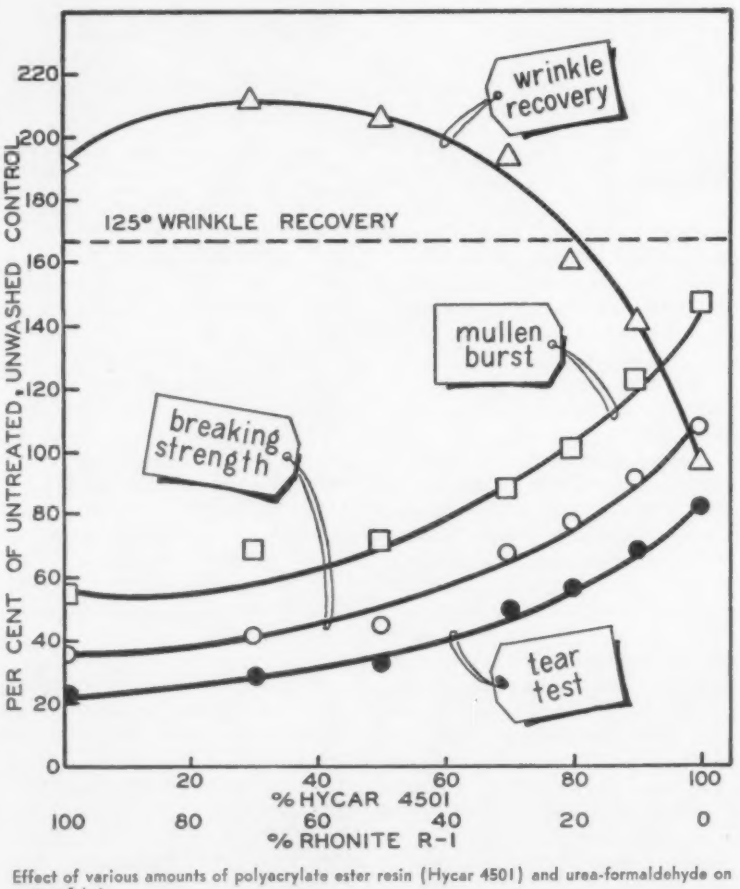
Various mixtures of urea-formaldehyde and synthetic rubber latices were applied to fine cotton fabrics. It was found that a polyacrylate ester latex*, when added to a minimum amount of urea-formaldehyde, gave superior wrinkle recovery without significant loss in other properties. It was possible to obtain a recovery angle as high as 166 degrees. The best combination of physical properties was obtained when the urea-formaldehyde to polyacrylate ester ratio was 25 to 75. This can be seen in the accompanying graph.

Because of the economics involved in finishing fabrics, a one-bath treatment will probably be used most widely. However, fabric may be treated with either component first from a two-bath system.

*Hycar 4501 (B. F. Goodrich Chemical Co.)



Wrinkle recovery tester. A small sample of fabric is folded in half and is inserted in a clamp which is placed under a weight for 5 minutes. Then the clamp, holding one fold of the fabric, is inserted in the tester and the other fold is permitted to relax. The free fold is kept perpendicular to the table throughout the recovery cycle, which takes 5 minutes. As the fabric unfolds the angle increases. If the fabric has poor wrinkle recovery the angle will be small. But, if the fabric has good recovery, the angle will be large. For good wrinkle recovery the recovery angle, in this test, should be at least 120 degrees. In the illustration above the sample has just started to relax and has reached an angle of 70 degrees. In 5 minutes it will have reached its maximum angle of relaxation.



Effect of various amounts of polyacrylate ester resin (Hycar 4501) and urea-formaldehyde on cotton fabric.

Washable woolens--fact or fancy?

Their sales possibilities have not yet been fully exploited

by Edward A. Murray
Chemical Engineer
Exclusive

THERE IS an old saying among analytical chemists that where a number of methods exist for a particular analysis, probably none of them is any good. Although it would be a gross exaggeration to apply this same reasoning to washable woolens, the large number of methods which have been proposed over the past fifty years certainly lends some support to the argument that we are still a long way from having the ideal treatment for rendering wool fabrics resistant to shrinkage in laundering.

Resins, chlorination, elastomers, enzymes, caustic soda, and quite a number of even more exotic treatments all have been proposed for the purpose. Some processes have met with limited commercial success, and it would be an injustice to the excellent research in the fields of resin treatment and chlorination to say that such stabilizing methods are commercially unsatisfactory. Millions of yards of woolen fabrics have been acceptably stabilized by both processes, but up to now the armed services have been the best customers for washable woolens, and they are willing to make some compromises for the sake of launderability.

To be realistic about the present situation in washable woolens, we must admit that all present treatments fall considerably short of fulfilling the need for true washability. What are the factors which contribute to this pessimistic picture, and what must be done to expand the market for shrinkage-controlled woolen textiles?

TECHNICAL PROBLEMS have, up to now, presented some of the biggest obstacles to be overcome in achieving a more general consumer acceptance of washable woolens. To varying degrees, all stabilization processes suffer in the following respects:

1. It is not possible to control shrinkage so closely in a woolen as in a cotton fabric.

2. The range of available colors with satisfactory washfastness is limited, and most of the acceptably fast dyes are rather dull.

3. Considerable skill is required to avoid excessive harshening by the stabilizing treatment.

All methods of reducing the felting tendency of wool fall into either of two categories: additive or subtractive processes. Both types are aimed at modifying the fiber surface structure.

An untreated wool fiber always tends to migrate in the direction of its root end when subjected to mechanical working. In any given textile structure—a mass of loose fibers, a yarn, or a fabric—this preference for movement toward the root end leads to entanglement of adjacent fibers under flexing conditions. The material becomes thicker, more compacted, and shrinks greatly in its overall dimensions.

This so-called "directional frictional effect" is due to the presence of tiny ratchets or "scales" on the fiber surface. The scale points are tilted in the direction of the tip of the fiber; if they were situated at right angles to the fiber axis there would be no tendency to felt.

Both types of stabilizing treatment seek to achieve a modification of the surface structure of fiber which will eliminate its strong preference to move in the root direction when the yarn or fabric is flexed. In subtractive processes, such as chlorination, a small amount of the fiber surface is removed by controlled chemical attack, and the scale tip is rounded off. In additive processes, typified by resin treatments, the valley next to the sharp edge is filled in by the resin.

In both cases, the over-all results are similar. A perfect stabilization treatment is one which eliminates the directional frictional effect, and produces a fiber which has no preferential movement in the root direction under flexing conditions.

CHLORINATION, and most other subtractive treatments as well, possess a disadvantage not commonly found in resin treatments. There is some danger of damaging the wool by overtreatment, thereby reducing its useful life. In heavy fabrics, like blankets, it is hard to obtain a satisfactory degree of treatment in the innermost fibers before those on the surface are overtreated. This hazard, together with some harshening of the fabric, are perhaps the greatest disadvantages of all subtractive processes.

Because they add some weight, and because they involve a smaller risk of wool damage, additive stabilization procedures would seem to have potential advantages over those of the subtractive type. Unfortunately, they also have their drawbacks.

Melamine resin finishes, the most widely used of the additive type, require somewhere in the neighborhood of 6 to 10 per cent of resin solids for good shrinkage control. With this much resin, the hand of the fabric bears little resemblance to that of the original untreated material, and few buyers would classify the change as a desirable one. The finish is also more expensive than chlorination.

ADDITIVE TREATMENTS appear to offer the brightest prospects for technical improvement in washable woolens. A number of resins have been claimed to confer an acceptable degree of shrinkage control when applied to the extent of only 2 or 3 per cent, based on the fabric weight.

One such treatment, the Australian Si-Ro-Fix process, was an-

nounced about three years ago. This finish is based on chemically modified nylon, and the resin is applied by padding from an alcohol solution.

Within the past few months a new process known as "Kylan" has been announced by Moretex Chemical Products, of Spartanburg, S. C. This treatment is based on chitosan, a chemical modification of chitin, which is found abundantly in shells of such crustaceans as shrimps, crabs, and lobsters, and in the horny exoskeletons of certain insects as well.

It is claimed that as little as 3 per cent of Kylan solids applied to the fabric will reduce the shrinkage of woolen and worsted fabrics in as many as 12 launderings from 40 to 5 per cent. This new treatment is now under study in a number of American mills.

If good stabilization can be attained with a low concentration of resin solids, it seems reasonable to predict that the hand of the fabric will much more closely approach the desirable softness of an untreated woolen.

Elimination of felting is not the only problem in developing washable woolens. Two others, washfast colors and "relaxation" shrinkage are also of considerable importance.

WASHFAST COLORS for woolens are rather limited in number; and they do not offer a full range of bright shades. Work on the development of new dyes for this purpose is continuing, and some progress has been made, but it will probably be some time before the dyer can meet all of the customer's desires for bright colors.

Even if felting shrinkage is well controlled, most woolens shrink considerably more than cotton during the first laundering. This co-called "relaxation" shrinkage is mainly due to the stretch introduced during weaving and finishing; although this type of shrinkage presents some problems even when fabrics are only dry cleaned, it is even more serious when they are laundered. Washable woolens, therefore, require careful handling in all finishing processes.

Despite their shortcomings, washable woolens still offer relief for the housewife with a big dry cleaning bill. While they can hardly be promoted on an "all things to all people" basis, the advantage of washability still offers sales possibilities that have not yet been fully exploited.

That the armed services consider this functional property worth working for is a convincing sales argument. And the continuing efforts of chemical companies and mill organizations to produce better washable woolens lends strong support to the observation that the consumer market for such products is worth going after.

Manetta likes piece dyeing

Change from raw stock dyeing cut costs and improved quality

Staff prepared
Exclusive

MANETTA MILLS, Lando, S. C., formerly dyed all material in raw stock form. The mill installed new piece dyeing equipment about November 1955. and results have been gratifying. Labor savings and reduction in inventory of dyed stocks formerly required has effected a notable improvement and economy, according to Harry Heath, president of Manetta.

The change was made from raw stock dyeing primarily to obtain brighter shades and better quality colors to meet competition. However, many additional benefits have been revealed in actual operation of the new piece dyeing equipment.

This mill has not discontinued raw stock dyeing, but merely added piece dyeing to its repertoire of processing procedures. The results achieved on the piece dyeing equipment cannot be duplicated in the cast iron raw stock kiers in this mill, according to Mr. Heath.

The piece dyed goods have a better hand and are more uniform in pastel shades as well as in bright colors. Furthermore, the finished product has more sales appeal as a direct result of the accrued improvements.

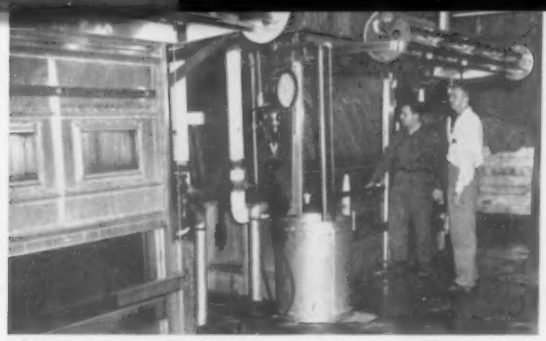
Blends of rayon, nylon, wool and cotton in various constructions are dyed in 72" widths in this blanket mill. The blankets are napped wet after piece dyeing; therefore, a better nap is obtained.

DYEING COSTS increased slightly upon changing over to the piece dyeing procedure, as expected, but were offset by lower labor costs in cleaning. Also, the inventory of supplies such as bobbins, spools, quills, and loom beams, and the storage space they required have been greatly reduced with attendant economies and reduction in supply costs.

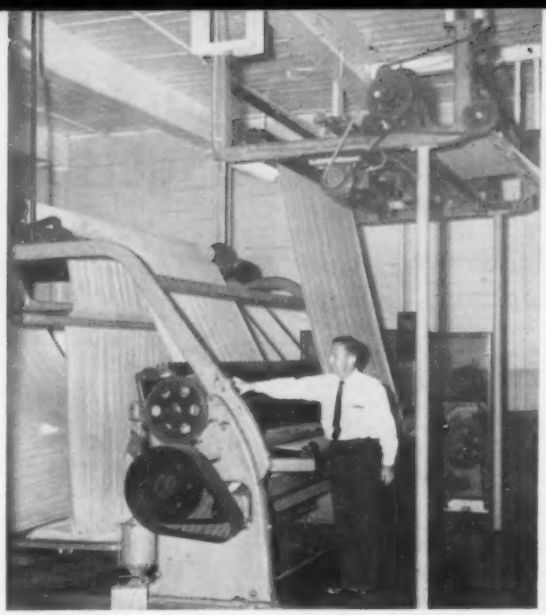
In cleaning, the cards do not have to be stripped to change color now. When dyed raw stock was run altogether, the cards had to be cleaned between different color runs. The spinning frames had to be cleaned thoroughly between runs, and loose fly of different colors presented a constant threat to quality by intermixing.

This danger no longer exists since all stock is run in the grey, and all yarns are also in the grey, dyeing being the last operation on goods from the looms instead of the first operation on the raw stock.

CARDS running grey stock are stripped every 24 hours. On cards running colored stock, a color change is necessary an average of five times in 24 hours, and it takes



Stainless steel becks are totally enclosed, and equipped with herringbone-type reels which constantly change the lay of the cloth and so help prevent streaky dyeing. W. C. Bolton, plant superintendent, is at right, with Kenneth Flowe, overseer of dyeing.



Dyed cloth first goes through squeeze rolls before entering dryer. Shown here is Harry Heath, Manetta Mills' president.

approximately 45 minutes or more to strip the card before starting another color.

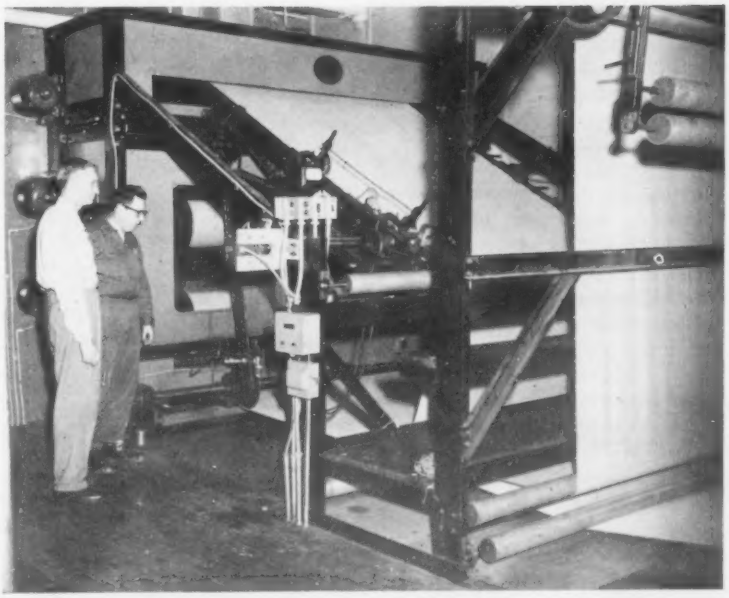
In spinning, changing colors requires about 20 to 30 minutes cleaning between colors. On other spinning frames, cleaning and stripping are done only once a week while the machines run.

THE DYE BECKS are 12 feet long, totally enclosed and built entirely of 18-8 SMO stainless steel. There are 80 to 100 yards per cut, and 12 cuts are dyed in one process.

The becks are equipped with herringbone-type reels, a special feature which eliminates streaky dyeing by constantly changing the lay of the cloth on the reel. The reels also permit dyeing longer cuts, thereby giving more production. The dyeing cycle requires 4 to 4½ hours.

After running through the squeeze rolls, the dyed cloth goes to a new dryer. The dryer is a two-section, eight-pass Model C Uniflow tenter dryer, made up in 10-ft sections with a range in width from 54″ minimum to 102″ maximum, and includes automatic cloth guide, selvage opener, air-operated non-recording-type temperature controller, electric tachometer with remote control for variable speed transmission, and a chain oiler.

The new dye house equipment was supplied by James Hunter Machine Co.



Automatic cloth guide and selvage opener adjacent to entering end of dryer is observed by Messrs. Bolton and Flowe. The dryer is a two-section, eight-pass, Model C Uniflow tenter type, made up with ten-foot sections. It is equipped with temperature controller, variable speed transmission, and chain oiler. The dryer can handle fabrics ranging in width from 54 inches to 102 inches.

Improved quality of finished product was effected by change to piece dyeing, according to Mr. Heath.

How tufted carpets are dyed and finished

Back-coating, dyeing scatter rugs, dyeing yardage goods, finishing tufted carpets

by Frank H. Cooper*
A. & M. Karagheusian, Inc.
Albany, Ga.
Exclusive

THIS ARTICLE is presented as an outline of general practices employed in the dyeing and finishing of tufted carpet.**

Briefly, these operations are carried out in the following order: Upon receipt of the tufted grey goods from the tufting department, or from the tufting mill in the case of commission dyers and finishers, the carpet is first latexed or backsized. After back-sizing the carpet is dyed, dried, and finished.

No specific mill's procedures are outlined in this paper, but rather an over-all picture of general procedure is given.

Back-Coating. The back-coating or back-sizing of tufted carpet is performed for two basic reasons: First and most important, to lock or bind the otherwise loosely held tuft to the body of the goods; secondly, the back coating material adds needed dimensional stability and hand.

By far the more common back-coating materials are the latex or rubber compounds.

Latexes are very fine particles of rubber or rubber-like materials dispersed in a water medium. The basic latex compound is formulated into end products possessing high film strength, quick, tack-free curing properties, a desired flexibility, and in some cases even color. Some of the latex suppliers or compounders, are located in the center of the tufting area in order to be in a competitive position in regard to freight cost. Along this line, some tufting plants have established latex storage and compounding facilities in their own plants to avoid handling the ready compounded material in drums.

The back-coating operation may be performed either before or after dyeing. Both procedures offer advantages and both procedures are being followed by the mills.

Regardless of when back-coating is done, the method of application is the same. The goods are fed to the back-coating machine or latex applicator from rolls or flats. After passing over several sets of smoothing and tensioning rolls the cloth passes over 8-inch to 12-inch diameter applicator rolls, which slowly turn in the latex pan or trough. The action of the applicator roll is to deposit a uniform film of latex on the back of the goods. The cloth then passes over a critically adjusted doctor bar or other metering bars which scrape off all but the desired quantity of latex. The cloth then passes into the curing area.

Many types of latex curing units are in use today. Some are simple vertical multiple-pass dryer units constructed by the plant. With an eye to simplicity, these dryers utilize banks of electric infra-red heaters. Gas fired infra-red units have not proved as satisfactory as the electrical type.

Conveyor dryers are also in use as curing units for the latex applicators and in some cases these too have been constructed by the plant. Electrical infra-red and steam heat have been used as heat sources.

Several tufting firms employ a latex curing oven which is termed a "float dryer." These dryers are so arranged that the coated carpet is suspended between two 24-inch diameter spike rolls positioned at each end of an insulated oven some 50 feet in length. The coated side of the cloth is on the lower face. Steam heated air is directed through slit ducts below the carpet. The upward force of this impinged air supports the carpet while the latex back-coating is cured, without subjecting the carpet material to undue tension.

Back applicator production speeds range from 4 to 15 feet per minute, depending on type of latex used, construction of the carpet,

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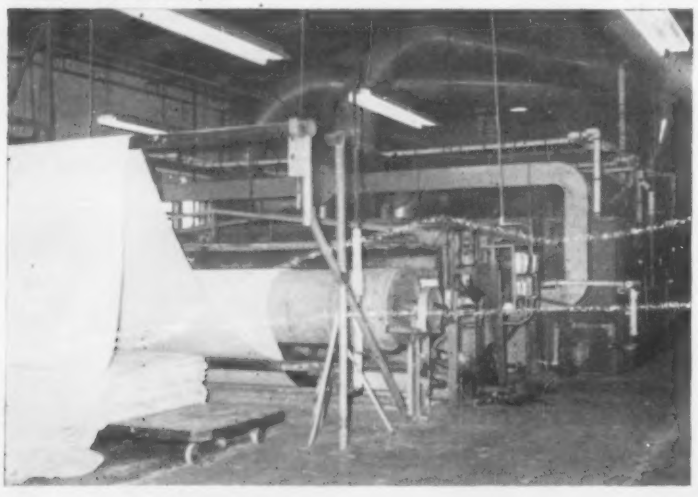
**The dyeing of other types of tufted fabrics was covered in TI's comprehensive studies of the tufting industry, "Tufted Textiles." See TEXTILE INDUSTRIES for June, 1955, pp. 163-138C; and June, 1956, pp. 137-182.—Eds.

Carpet direct from tufting machines is backsized with a latex compound and cured in a horizontal float dryer.



and dryer characteristics. Curing ovens usually are operated at temperatures of 250 to 320 F.

Following the curing oven, the coated goods are wound on cores or folded on flats for movement to the dye house or inspection area.

Dyeing of Tufted Carpet. Generally speaking, the dyeing of tufted carpet can be divided into two main classifications: Scatter size rugs which are dyed in laundry wheels or paddle machines, and yardage goods dyed in becks. Let us first look into the dyeing of the smaller scatter rugs.

In the evolution of the tufting industry the first production of tufted carpet was substantially an outgrowth of tufted bedspread work. These first scatter rugs were sewed on cotton backing little heavier than the spread backing. The goods were sent to commercial laundries in the area which were doing the bleaching and tumble finishing of bedspreads for dyeing.

Naturally, the laundries used the equipment at hand, their regular laundry wheel. After dyeing, the goods were extracted and dried in a tumble dryer. This tumble drying played a very important part in the development of salable material. It is common knowledge that the first examples of tufted carpet were very open in construction, and without the fluffing and blooming of the cotton pile yarn imparted by tumble drying it is doubtful that the goods could have been considered as rugs. Of course great strides have been made in the fabric construction of tufted rugs, but the tumble dryer still plays a major roll.

Many dyeing procedures have been employed in wheel dyeing of scatter rugs. Three will be outlined for comparison.

Method A:

Load machine (100-500 pounds).
Run in hot water (160-180 F) and add wetting agent.
Run 10 minutes and drop bath.
Run in hot water (160-180 F) and add dissolved dye slowly.
Run 10 minutes and then slowly add 5 to 20% (OWF) common salt (brine) depending on depth of shade.
Run 20 minutes or until bath is exhausted or depth of shade desired is obtained.
Drop bath and rinse cold. Unload.

Method B:

Load machine.
Add cold water and a suitable wetting agent and run 5 minutes.
Add predissolved dyestuffs and 5-10% OWF common salt.
Raise temperature to 200 F and run 10 minutes, or until bath exhausted.
Drop bath and rinse.

Method C:

Load machine.
Add cold water and a suitable wetting agent and run 5 minutes.
Add predissolved dyestuffs.
Raise temperature rapidly to 200 F and run 10 minutes.
Add 5-20% OWF common salt and run at 200 F for 20 min.
Drop bath and rinse.

Method A was developed for wheels with no steam supply other than hot water, and may be used with direct dyes which have good leveling properties and are not particularly salt sensitive.

Method B can be utilized on direct colors with success, except with those which are very salt sensitive. Of course, the dyeing machine must be supplied with raw steam and preferably an automatic temperature control. This is a very fast dyeing procedure as compared to the others mentioned.

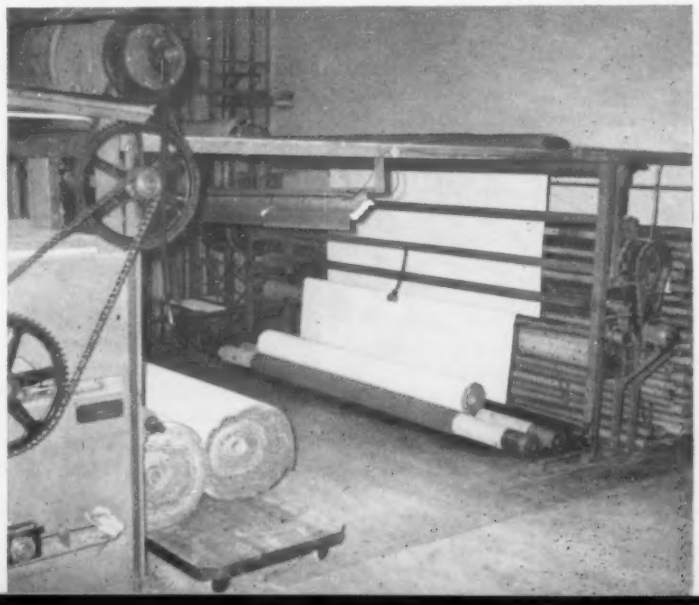
Method C has also been used by dyers who have steam-equipped dye wheels. Although this procedure is a little longer, it is of interest since most direct colors may be used, thus giving the dyer latitude in which to reduce color cost and to develop shade combinations which give him as little trouble as possible.

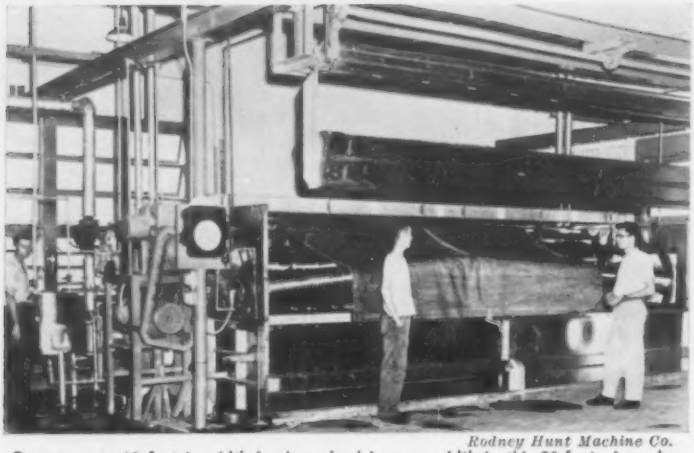
It should be pointed out here that dyestuff selections are influenced greatly by the quality of goods being dyed, the fastness properties required, and the allowable dyestuff cost.

Carpet Dyeing in Yardage Form. The bulk of the tufted carpet being dyed today is handled in the yardage state. This term applies to goods tufted in rolls or flats of 25 to 200 yards. The popular broadloom widths of 9, 12, and 15 feet are tufted or dyed in yardage form.

With few exceptions, the dye beck or winch machine is used for the dyeing of yardage goods. This machine is adapted for carpet work, consists essentially of a large oval tub up to 20 feet in width, with a liquor capacity of up to 6000 gallons. The tub is fitted with perforated false bottoms, a round reel is generally used, and the beck is equipped with the usual temperature controls. The goods are held in open width by a pair of conical scroll rolls, electrically operated, which also keep the goods centered in the beck. Reel speeds of 60 to 120 yards per minute are used, depending on style and plant preference. *(Continued next page)*

Delivery end of festoon dryer, showing finished carpet being wound onto rolls for movement to the inspection area.





Rodney Hunt Machine Co.

Carpet up to 18 feet in width is piece dyed in open width in this 20-foot piece dye kettle. Note stainless steel dye storage tank at left—a key part of the steam jet siphon dye distribution system which is responsible for more even distribution of dye in the kettle.

The dyeing assistants and dyestuffs are usually prepared by dissolving or boiling up in a stainless expansion tank, and are piped to the becks, where they are either added to the front of the beck behind a false front or are injected under steam pressure from perforated dye lines which extend across the bottoms of the becks under the false bottom. Both methods have advantages and both are in current use.

Dyeing Procedure.

The first procedure is recommended for the dyeing of light shades on cotton yardage goods.

Fill beck and load goods into cold water containing:
0.5% (OWF) Igepon T
0.5% (OWF) soda ash
Raise rapidly to 210 F and scour 20 minutes.
Drop scour liquor and cool goods.
To fresh bath add:
0.5% TSPP, 0.25% Igepon T.
Add well dissolved dyestuff over 10 minutes.
Raise temperature to 200 F in 30 minutes if dyeing unlatexed goods, 40 minutes if dyeing goods latexed prior to dyeing.
Hold at 200 F for 10 minutes and salt as follows with temperature held at 200 F.
1% common salt (as brine), wait five minutes.
2% as above.
4% as above.
Run 20 minutes at 200 F and sample, turning steam down.
Drop bath. Rinse cold. Pull.

Method C is recommended for the dyeing of viscose rayon tufted goods. Although there exists some controversy as to the safety of this procedure, it has been used with success with many dye combinations. Even combinations containing very fast drawing dyestuffs have been handled succesfully by this method.

Method C.

Fill tub with water and raise to 210 F at once and hold at that temperature.
Add 0.25% of 100% active high temperature detergent.
0.5% TSPP.
Let agitate 5 minutes.
Add well dissolved dye evenly over 15 minutes at 210 F.
Salt using brine:
0.5% OWF and wait five minutes.
1% OWF and wait five minutes.
2% OWF and wait five minutes.
4% OWF and wait five minutes.
Run 20 minutes after last salt and turn steam down and sample. Flood the tub to reduce temperature to 140 F and drop bath. Rinse in cold water and pull.

The quality of the dyeing of tufted carpet is necessarily high. Even the slightest shade variation across the piece or from end to end is immediately noticeable at seams made in wall-to-wall installation. Since wall-to-wall floor covering constitutes a major portion of total yardage consumed, it has become necessary in many plants to take extreme precautions in choosing dye combinations and dyeing procedures. Some plants have made dye beck modifications to improve shading conditions, with varying degrees of success. Other plants are tufting stock dyed yarn in those colors giving trouble and in this way have licked the shading problem, although at a sacrifice in the mill price of the finished product.

Much work is being done by mills and by dyestuff and machinery manufacturers with the aim of designing new equipment to enable the plant to use the more economical piece dyeing operation and still produce a perfectly level dyeing.

Tufted Carpet Finishing. The finishing of dyed carpet consists basically of extraction, fluffing, and drying operations, usually done continuously. The dyed carpet is transported from the dyehouse in large stainless steel boxes or on stainless steel flats onto which the goods have been folded as they were pulled from the beck. These wet dyeings weigh two to four tons each.

At the finishing range, the goods are fed to a vacuum extractor or to rubber-faced squeeze rolls, or both, to reduce the moisture content to 100-130%. The carpet is then subjected to a beating action which jars the pile yarn upright and also blooms the carpet face.

In this condition the carpet enters the dryer. Generally 18-foot wide festoon-type loop dryers are used, operating at four to ten feet per minute and at 250 to 310 F, depending on carpet construction and pile fiber.

Other dryer types have been used, but usually to fill some specific requirement of a particular plant.

From the dryer the goods are usually beat again to bloom the pile and are then folded onto flats or wound into rolls for movement to the inspection area. In those plants where the dyeing is done on unlatexed goods, the carpet is taken to the back-coater for latexing as described previously.

Here's a carding department incentive system to

Keep fixers, grinders, and customers happy

Staff prepared Exclusive

REALIZING THAT competition and cash are two good incentives, Avondale Mills' Sycamore (Ala.) plant uses both in maintaining high levels of fixer and grinder morale and yarn quality.

Fixers (opening and picking) are graded on maintenance and quality, and a cash award is granted the periodic winner. Fixer awards are made every four weeks.

A second award is made every month to the Avondale plant which maintains the lowest lap coefficient of variation for the monthly contest period.

IN OPENING AND PICKING, the fixers are given demerits for the following conditions:

Condition	No. Demerits
Department inspector "gig"	1
Machine inspection report "gig"	1
Each picker lap over variation standard	2
Each picker lap found out of weight tolerance	1
Each customer complaint charged against department	2

Each fixer's score is determined by adding up his demerits for the month and subtracting his total from 100.

Among the card grinders the demerits are given for the following conditions:

Condition	No. Demerits
Department inspector "gig"	1
Card inspection "gig"	1
Each card sliver over variation standard	2
Each card web graded "B"	1
Each card web graded "C"	2

No detail is too small for attention if it concerns quality. Grinder Howard Kissic and quality control inspector Melvin Dodd check the fillet condition on a traverse grinder.

Every four weeks the grinders' scores are determined by subtracting each man's total demerits from 100. The one with the highest score gets the cash award and the distinction of being the best grinder of the group for that period.

ONE FIXER PER SHIFT is able to keep the opening and picking machinery in superb condition—a statement supported by reports from Avondale's central quality control office. Each month sees representatives from that office paying surprise visits to the various plants to check on lap uniformity.

The results of these checks determine which plant is entitled to keep the company's best-picker-lap award for the month. To assure representative results, the central office checkers inspect the first laps doffed after their arrival. No last-minute corrections can be made by the local personnel. The award is displayed at Sycamore almost constantly.

Opening and picking equipment include, placed in the order named, the following machinery:

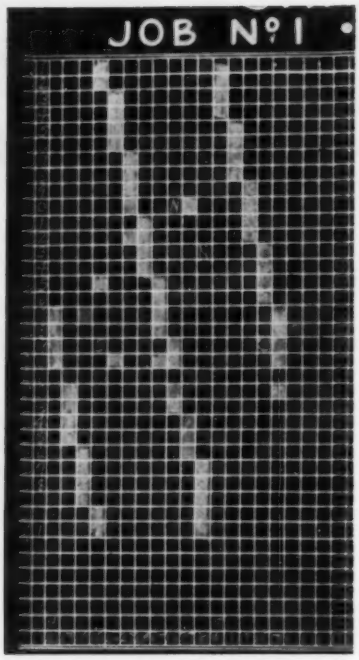
Twelve Saco-Lowell blending feeders emptying into a Superior Cleaner. Following the Superior Cleaner is a vertical opener, a No. 11 dust and waste extractor, a No. 12 Saco-Lowell filter, and a condenser.

A 300′ trunk line conducts the stock to the picker room and into two more Superior Cleaners. These cleaners empty into a Gyrator, which distributes the stock to the seven pickers, all of which are equipped with pneumatic lap racks.

Opening room humidity is maintained around 45% relative. The 40″ lap (14.50 oz per yard) is formed in ten minutes. Cotton used is 1 1/16″ SM.

A competitive spirit is encouraged through a system of

The grinder's board (one for each grinder) is used to picture the grinding progress and the comments of the quality control inspector. The board is not cleared until all vertical columns are used, which requires about four months.



Enlargement of the grinder's board reveals the card numbers at the extreme left border, the dates at the bottom, and the remarks of the quality control inspector. Each square chalked in represents one card ground. More than four grindings per day reflect the number of reground cards.

stenciling or painting the fixer's name on each machine he is to maintain. The system permits the maintenance of all the equipment to be divided equitably among the three shifts, and precludes any misunderstanding as to "who" is responsible for "what."

Breakdowns, of course, get first priority of the fixer's time regardless of whose name is on the machine. But the on-duty fixer is responsible only for doing a good job of his repairs. The fixer to whom the machine is assigned takes it from there.

Actually, breakdowns are rare, for each fixer is able to concentrate his efforts on his own equipment. Thus preventive maintenance is effected. No equipment "limps along" until a costly overhaul is necessary.

The seven pickers are divided on a 2-2-3 basis among the three fixers. Each year the odd picker is assigned to another fixer on a rotating basis.

Each fixer checks his laps weekly; central quality control makes surprise monthly checks for determining the plant's standing. Average CV: 1.00.

THERE ARE 203 CARDS in use, 61 of which are Howard & Bullroughs, 6 are Woonsockets, and the remaining 136 are Saco-Lowells. Two grinders per shift maintain them adequately through the following layout:

Job No.	No. of Cards
1	31
2	30
3	34
4	36
5	36
6	36

The cards running on combed work are assigned 36 per fixer; the others are assigned in smaller numbers to offset differences in stock, speed, and card make.

Rather than stencil the name of each grinder on his cards, management has mounted a black board over each grinder's work bench. The board is marked in squares to form a sort of graph on which the numbers of cards on the grinder's job are plotted against the date of the scheduled grinding.

The squares are large enough for the quality control inspector to enter his remarks in code after each day's inspection. He inspects

COLOR CODE

Code Letter	Explanation	Color
G	Grinding	Blue
R	Down for repair	Lt. green
RG	Regrind	Red
FD	Flats dirty	Gray
CH	Coiler head noisy	Dk. green
FF	Flats faced	Yellow
BD	Belts dirty	White
HB	Hot bearing	Pink
CB	Comb box noisy	Orange
W	Bad web chokes	Brown
N	Very neppy	Purple
	No color for following:	
B	Bruised clothing	
BL	Parts broken or loose	
S	Doffer comb snagging	
FR	Feed roll gummy or dirty	
SR	Scavenger roll cover off or loose	
T	Flat pulleys stuck, not turning	
CD	Clearers or doors off	
ST	Stripping mechanism not operating properly	
O	Improper oiling of coiler head	
BG	Badly worn gear	

all cards daily on the second shift. All webs are graded from samples taken by the grinders.

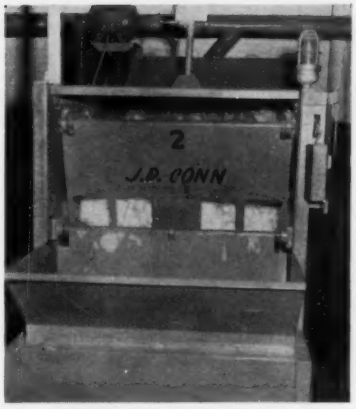
The grading system:

Web Grade	No. of Neps (per 100 sq in)
A	20 or less
B	25 to 30
C	31 or more

All B-grade webs draw the responsible grinder one demerit. Those cards producing C-grade webs (two demerits) are stopped off until the condition is corrected.

THE CODE used to enter the findings of the quality control inspector on the fixers' boards is reproduced on each inspection report form and on each blackboard. Wherever possible, colors are used. The code used appears in the accompanying box.

The use of the color code is limited, naturally, by the number of colors which can be used without the code itself becoming laborious and to keep the amount of colored chalk needed from growing prohibitive.



In the opening and picking room the name of the fixer is painted on the equipment he is to maintain.

FOUR CARDS DAILY are ground by each grinder. The individual cards to be ground are marked off in squares on the blackboard, opposite the date of the actual grinding. The system is flexible enough to permit regrinding of occasional cards without upsetting the schedules.

Screens are removed and cleaned each six months. One overhauler and his helper are adequate for all card, opening, and picker room overhauling. Flats are set on alternate grinding rounds. Backs (cylinder and licker-in screens mote knives, licker-in to cylinder back and front plates, and feed plate) are set on those rounds not involving the flat settings.

The doffer-to-cylinder and doffer comb settings are made each round. Vacuum stripping is employed; hand stripping is done only at grinding.

Quality control is strictly a staff function. All reports prepared on inspections are routed to the superintendent's office with copies to the respective departments.

Campaign launched to prevent accidental falls

● ACCIDENTAL falls is the target of a nationwide campaign to be launched on Sept. 1 by the National Safety Council. In the nation's industrial operations alone, more than 450,000 persons are temporarily or permanently disabled annually by falls, the announcement indicated.

"Our goal in this campaign—and I know it is an ambitious one—is a 50 per cent reduction in injuries and deaths due to falls," said Ned H. Dearborn, president of the Council. "We feel that by focusing special effort on this single accident target, we will be able to arouse management and worker to drastically cut those unsafe attitudes and conditions that lead to falls."

Beginning Sept. 1, and continuing to Aug. 31, 1957, the campaign will be an across-the-board operation, hitting at accidental falls wherever they may occur in industry, in the home, in public places—wherever there are people.

Falls were singled out for special emphasis not only because of their numerical importance, but because they can be prevented by voluntary individual behavior more effectively than other accidents. A little extra caution and knowledge on the part of each person can do much toward the reduction of falls.

The occupational phase of the campaign will be on an organized basis with registration, record keeping, and awards. Any company or governmental agency is eligible to participate in the falls campaign. Enrollment may be on the official registration form provided on request from the Council or simply by letter. Operations at different locations employing 25 or more persons should be registered separately.

To assist participants in carrying on an effective campaign, the Council will make available a series of 13 posters and three large banners. Films, flip charts, illustrated booklets, five-minute safety talks, and safety instruction cards on falls also may be obtained.

Each participating concern will be sent a suggested campaign plan for scheduling and using the materials and incorporating them into its safety program.

A "Certificate of Achievement" will be awarded to each plant achieving the goal of a 50 per cent reduction in falls or having no chargeable injuries from falls during the campaign year. Companies enrolling in the campaign must provide injury experience from falls covering 1955 and 1956 to the nearest convenient date. A special feature of the campaign will be a "Certificate of Commendation" to supervisors who attain the campaign goal.

For a copy of the booklet, "Falls Aren't Funny," and a brochure listing the campaign materials available, write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Better body armor fabrics through research

One of the principles on which Fabric Research Laboratories, Inc., Dedham, Mass., operates is based on Harold DeWitt Smith's 1944 Marburg Lecture in which textile fibers are considered as engineering materials. In this principle, knowledge of the mechanical behavior of fibers is used to select fibers and fabrics to meet specified end use requirements in an economical and practical way.

Reported here is an example of this approach: The programming and general results of a study made on body armor for the Navy Bureau of Aeronautics to assist in selecting the most practical fiber (and ultimately the most practical fabric) for use in a suit designed to protect an airman against flak.

Staff prepared Exclusive

IN PROGRESS since 1947 at Fabric Research Laboratories, Inc., is a fundamental study aimed at defining the optimum selection of fiber type, yarn, size, twist, and fabric structure to be used in protective clothing to withstand maximum ballistic impact, and through this resistance to protect the wearer of the garment.

The program has passed through several stages:

1. Observation of the elastic modulus of yarns under small scale impact strains using an electrical pulse propagation apparatus with a view to projecting the results to larger scale strains.

2. Evaluation of fabric assemblies as to their resistance to ballistic impact as simulated by a Standard Yawed Dart Ballistic Test developed by the Naval Research Laboratory.

3. Evaluation of single yarns as to their resistance to ballistic impact as simulated in a high impact tensile test by a modified Standard Yawed Dart method.

4. Correlation of these evaluations and establishment of fiber, yarn, and fabric selection criteria.

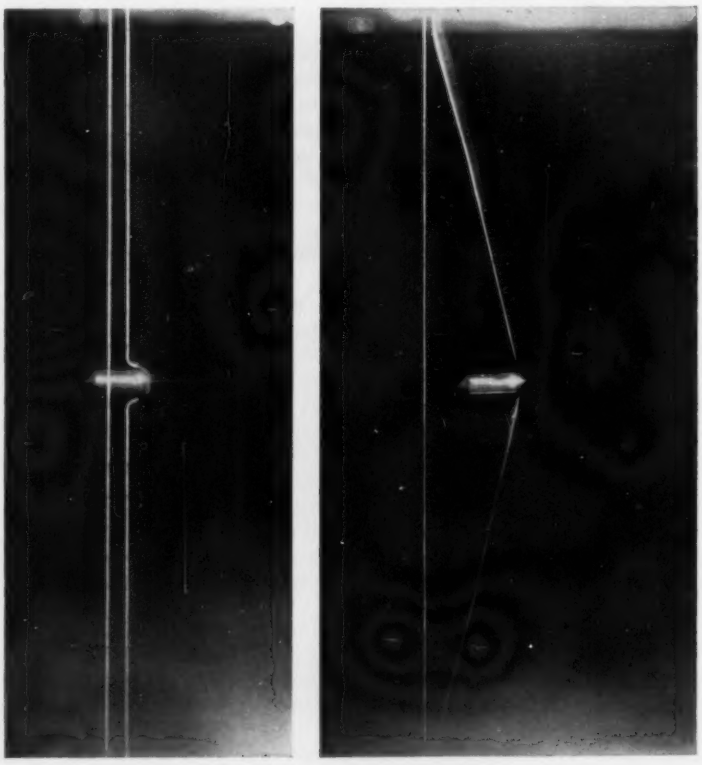
5. Correlation of findings with actual field test results.

Pulse Propagation Studies. For two years, before any firing was done, an apparatus consisting of an Instron Tensile Tester and a Pulse Propagation Meter was used to screen continuous filament yarns and give clues as to which fibers could be successfully used in the design of ballistic protective fabrics. The former measures the tensile properties of the specimen; the latter measures the velocity of sound waves through the specimen.

The device puts a small transient strain pulsation into a known length of yarn through the Pulse Propagation unit and microcrystals. The microcrystals are housed in the Instron Tester and are in contact with the yarn at a known distance along the yarn sample.

As the yarn has tension applied, the speed of sound through it increases; this rate is measured by the Pulse Propagation Meter. The applied rate of tension is by a small impact; results are transferred to terms of larger impact mathematically; the resulting data

Single yarns are tested for missile impact. (Left) A polyethylene yarn, which has potentially a good energy absorption because of its high extensibility at slow rates of straining, reveals poor performance under ballistic impact because of its low rate of strain propagation away from the point of impact. (Right) The Fortisan-36 has a high strain propagation rate.



are considered representative of the impact behavior of yarns similar to that upon initial contact with a projectile.

What actually is measured in this evaluation is the movement of the strain in a given time; the faster it moves (the higher the strain rate), the less likely is the yarn to puncture under ballistic impact when used in armor. Rate of strain may also be thought of as an energy absorbing property.

As a result of the screening, high tenacity nylon was ranked high in strain propagation as well as in another important factor—low to moderate elongation. Other interesting fibers screened in regard to these properties were Fortisan-36 and Dacron.

Further pulse propagation studies were made to determine the effect of filament yarn twist. Nylon was found to be affected little (as regards strain rate), and Fortisan-36 was found to be twist sensitive; the high twist decreases the strain rate of Fortisan.

The Standard Yawed Dart Test. The second phase of the body armor project at Fabric Research Laboratories involved an evaluation by the pulse propagation meter studies of yarns isolated under conditions resembling actual use: the yarns were either woven or in some way oriented, built up to specimens of known weight, and subjected to ballistic conditions as specified in a method known as the Standard Yawed Dart Test.

Designed by the Navy to simulate the effectiveness of a flak suit or curtain against the punching effect of the flak rather than its effectiveness against a rifled missile, the test is a measure of the limiting velocity of the sample. Limiting velocity refers to the measured maximum velocity of a projectile that the sample will withstand without allowing complete passage through the sample.

The apparatus required to perform the test consists of a gun, a baffle, a ballistic pendulum, and a cathetometer. A number of fabric layers prepared to a standard weight are enveloped in paper and mounted in a pendulum against a clay slab designed to simulate the presence of the human body.

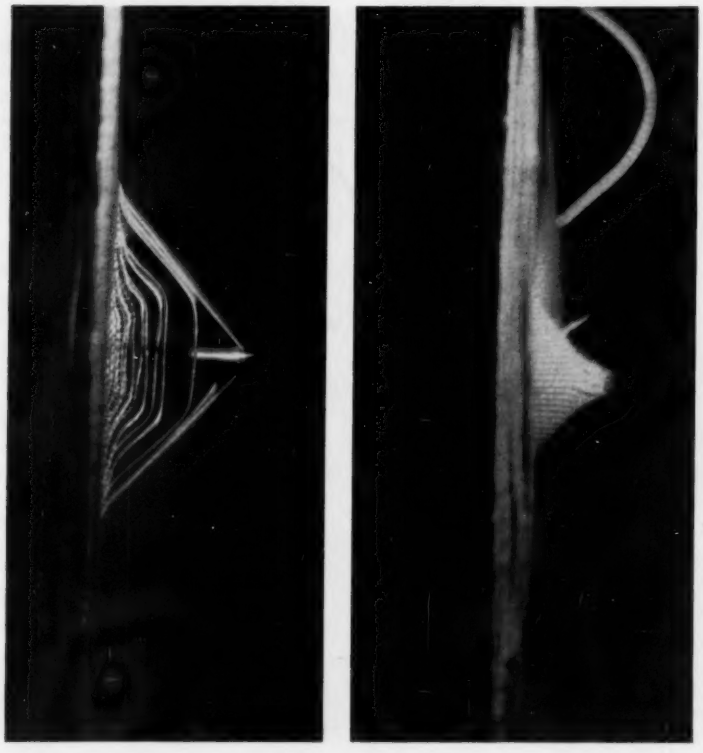
A .22-caliber, double pointed dart is fired. It passes through the baffle which eliminates the effect of the blast gasses on movement of the pendulum. Upon leaving the baffle, the dart strikes a tripping device which rotates it 90°. The vertically turned dart enters the pendulum and strikes the sample pad.

By repeating the test firing, and varying dart velocity by adjusting the powder charge, a point is reached where the dart is just held by the last fabric layer of the sample pad. This is the limiting velocity. By knowing the mass of the pendulum via cathetometer measurement of its displacement caused by firing, the limiting velocity may be calculated.

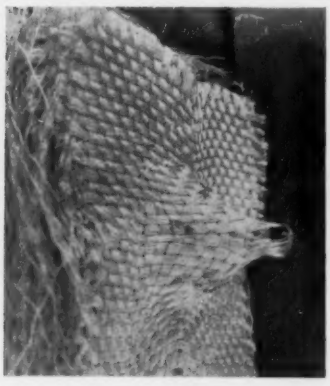
Over 120 combinations of fiber and fabric variations were tested in this way to determine which assemblies have the highest limiting velocity and by this measure, which ones could be considered to offer maximum protection against flak.

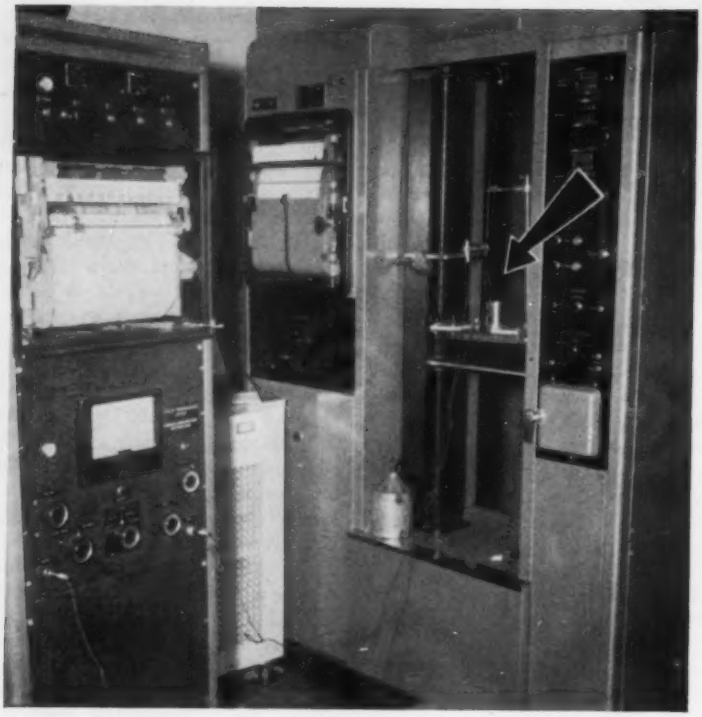
An important assembly tested in the early work consisted of cross-layed nylon warps containing no filling; good results so obtained led to a major conclusion concerning the nature of armor fabric selection; the fewer interlacings in

Fabrics are tested for missile impact. These two different fabric styles have the same nylon fiber content. (Left) This fabric has most of its yarn in the warp and propagates the strain over a wider fabric area than does the basket weave fabric (right).

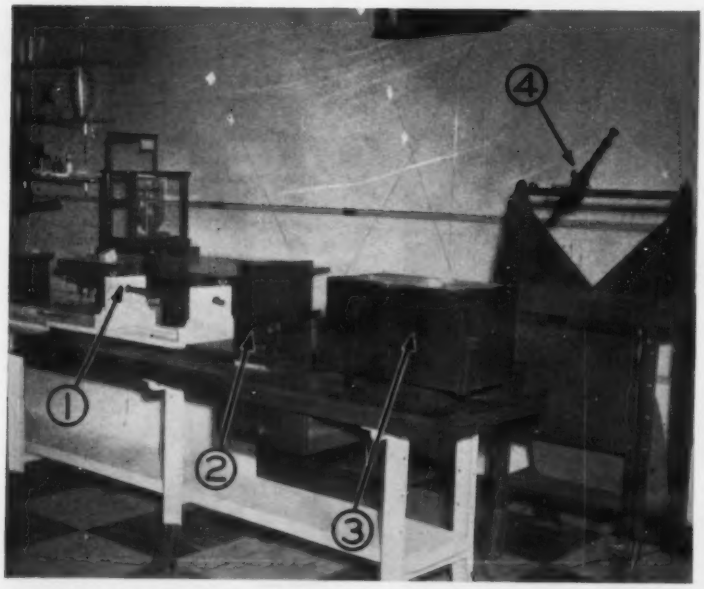


This Fortisan pad is composed of many layers of basket weave fabric. In the test to determine its limiting velocity, the missile has penetrated to the last layer, but has not punctured.





Yarn sample in Instron (arrow) is subjected to a simulated small impact. A sound pulse is passed through the yarn as it is being stressed, and the change in propagation rate is measured; these results are then transposed to larger impacts. Device at left is a Pulse Propagation Meter which measures and records the velocity of the sonic pulse through the test specimen. This test was used as a screening device for various yarns.



Apparatus for yawed dart test controls firing conditions and measures maximum dart velocity the sample will withstand without complete penetration. Parts include (1) gun; (2) explosion gas baffle; (3) ballistic pendulum (note suspension wires); (4) cathetometer.

the individual fabric members of the assembly the better.

High Impact Tensile Testing. In order to tie in the effect of ballistic impact on individual yarns in armor assemblies with the measured limiting velocity of the assembly, a technique originated at the Army Chemical Center, Edgewood, Maryland, was adapted by Fabric Research Laboratories, Inc.

In this test, the yarn sample is mounted between the baffle and the pendulum; upon firing, the dart enters the baffle and passes through it without any deflection or yawing. The effect of the dart on the yarn is captured photographically through a trip wire delaying circuit in the baffle.

The test is performed in a darkened room with an open shutter camera; the trip wire activates a Microflash, i.e., a high intensity light source with a maximum light intensity duration of ½ millionth of a second. The resulting photograph "stops" the dart in flight as it contacts the single yarn strand.

To get a "before and after" view of this, a double exposure is made: one before firing, and the other as described. The visual effect of impact can be determined by placing calibration marks on the yarn at known spacings and measuring strain effects along the test yarn graphically on the photos. Resulting stresses can then be calculated mathematically and a stress-strain curve can be plotted.

This test is considered to indicate ballistic impact behavior in the fabric without the disadvantage of observing a confusing maze of yarns under impact as is the case when a fabric assembly is tested.

Summarizing the results of the impact study in a general way, if only a small length of yarn is brought into play with the impinging dart, the protective effect of the yarn is minimized; the greater the length affected with the least displacement from a straight line, the better.

Results. Combining the findings of the pulse propagation studies, the Standard Yawed Dart Test, and

high impact tensile testing, certain optimum fiber, yarn, and fabric properties, using existing materials, can be specified.

Further substantial improvements in ballistic behavior are not felt to be possible unless a new fiber is created with higher energy absorbing properties than those now available. However, application of the results obtained to date could contribute to the tailoring of this new fiber which would be specifically suited to the needs of body armor.

The Future Body Armor Fiber. A general specification for the future body armor fiber would include the following:

1. Fiber: High tenacity nylon and Fortisan-36 prove very effective to ballistic impact. Such yarns as polyethylene, while exhibiting good static energy absorption, must be discarded for this purpose because of low modulus or poor strain propagation under high speed loading.

2. Yarn: Yarns should be reasonably heavy with low twist. 210 denier/7 ply nylon yarn is satisfactory, as is 840 denier/2 ply nylon. Very heavy yarns such as 210 denier/18 ply do not offer any further improvement.

Yarn masses of proper lengths could possibly be used in a nonwoven type of fabric.

3. Fabric: A range of fabrics can be effectively used. One is the so-called unidirectional construction, similar to tire cord, in which more than 90% of fabric weight is in the warp direction. The layout of this fabric is: 35 to 40 ends of 210 denier/7 ply nylon with low twist in the warp, with 30 picks of 40 denier, medium twist nylon in the filling, plain weave.

In fact, the less weaving involved, the better. Basket weave fabrics can be used; the more loosely woven the basket weave, the more closely related is the behavior of the fabric to the behavior of the yarn. Looseness of weave is limited by the cutting and handling requirements of the end-item fabricator.

Field Testing. Specific assemblies, isolated as a result of work at Fabric Research Laboratories were subjected to the Navy's Forward Spray Test. This served as a means of placing the assemblies under conditions as close to those encountered in actual usage as possible. In the test, a 20 millimeter shell is exploded in front of the specimen, and the penetrations are counted. None of the assemblies tested was rated as inferior.

Summary. It can be seen how Fabric Research Laboratories has applied an engineering approach to the complex problem of developing the most efficient material for use in body armor. The work has been carried from a critical examination of the molecular structure of various fibers through to the actual construction and evaluation of a military end item.

A point has been reached where future improvements, if they are to be made, must come from the producer of the basic polymer. In the words of Harold DeWitt Smith, [beyond the foreground of present day manufactured fibers] " . . . . is the wide and exciting horizon of the future in which the only real limitations on the variety and the characteristics of textile fabrics yet unborn will be the ability of the textile designer and technologist to help the fiber maker to understand what kind of fibers are wanted."

Do something about taxes now--NAM

Almost everyone will agree that tax rates are too high; that something should be done about them. The only question is: What and When?

The National Association of Manufacturers believes that the time is now, according to a recent announcement. Accordingly, it has proposed a five-year plan for the "gradual and orderly reduction" of the federal income tax rates.

Following is a brief description of the NAM plan.—The Editors.

● "AS THE American economy expands, so does the amount of federal tax revenues from a given set of rates, but in greater proportion. Over many years, good and bad together, our economic growth has averaged out at about 3% a year, measured by physical volume of goods and services. Assuming no more than such average growth in the next five years, revenue expansion is estimated at over $12 billion.

"Under the five-year plan this revenue increase would be first applied to moderating the discriminatory rates. The cost of the plan would be about $10 billion, or $2 billion less than the expected revenue growth.

"How the plan would work: There would be five successive annual reductions of 16% in the surtax part of each tax rate, with each reduction computed on the original surtax—that part of the rate above 20%. With the top rate reduced to 35%, the 50% rate for example would be reduced to 26% (80% reduction of the progressive spread of 30 percentage points). In other words, every surtax taxpayer would receive the same percentage reduction in his unfair tax burden. With five uniform roll-backs in each super-rate, his tax bill from progression at the end of the period would be 80% less than at the beginning.

"The corporate tax now consists of a 30% normal tax, and a 22% surtax, or a combined top rate of 52%. Tax law now provides for a reduction of 5 percentage points in the normal tax.

"The proposal is that this reduction be followed by four successive annual reductions of 3 percentage points each, or a total of 12 percentage points, to bring the combined top rate down to 35% at the end of five years. The 12 percentage points would be divided equally between the normal and the surtax, so that the total reductions from present rates would be 11 percentage points in the normal tax and 6 percentage points in the surtax."

Blending is done in the recombing. This consists of two prepare gillings, a combing, and two more gillings. Photo above shows the first prepare; at this point is where blending is initiated.

Delivery of the second French comb. This operation is about the same as the first combing, except that noilage is less. Two gillings which follow combing deliver sliver ready for drawing.

Livingston combs worsted twice

Recombing blends and parallels top-dyed work

Staff prepared Exclusive

ONE OF THE interesting things about worsted yarn manufacture is the wide mill-to-mill variance in organizing equipment to suit different types of stocks and yarn quality, and even to do the same job. Aside from basic selection of either Bradford or French traditional systems, the only thing standard about operation sequence seems to be the fact that there is no standard.

Most modern mills have further modified operations by use of "abbreviated system" equipment in drawing and spinning. One such spinner, Holyoke, Massachusetts' Livingston Worsted Mills, Inc., is a specialist in production of fine fancy worsteds.

Here's how this mill has organized French combing with abbreviated system equipment for best results in one of its three coloring systems—slub dyeing—by inclusion of a double combing operation.

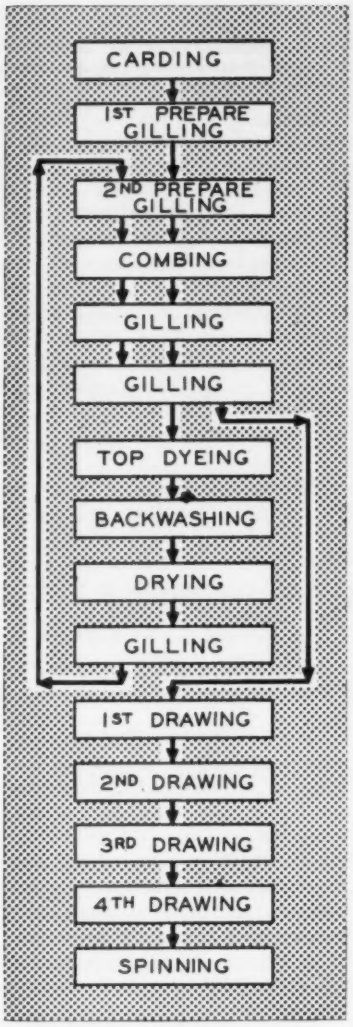
LIVINGSTON WORSTED concentrates its manufacturing efforts on producing 100 per cent wool men's suitings on a "to order" basis, directed to better price bracket users. Therefore, all of its raw materials generally fall in the 64s to 70s grade range and its yarn manufacturing facilities, which are fundamentally French system, are mostly used in the production of slub (top) dyed work.

As a result of a modernization program, a nine-operation French drawing system was replaced by a four-drawing abbreviated system. While redrawing is generally considered important after slub dyeing to re-orient fibers, its universal use at Livingston serves to insure thorough color blending as well; this planning compensates for the reduction in drawing operations.

Following carding, organization of operations on the white, balled sliver includes a first and second preparing (gillings) to reduce product weight, combing, an assembly gilling, and a finishing gilling. The weight of the product is usually about 320 grains.

Balled tops are routed to the dyehouse. After dyeing, tops are palletized in blocks of 12 triple-tiered balls.

COLOR LEVELNESS is consid-



Organization of operations for producing slub dyed fine worsted yarns includes a double combing for blending efficiency.

ered in the 12-end backwasher feed; the dryer delivery of this unit feeds a gilling which effects about a 10 per cent reduction in weight over fed tops.

The colored product is then passed through the two prepare gillings again, at which point color blending is introduced.

Combing follows, and while noils are less than in the first gilling, settings and procedure are about the same for both. The doubling is finished off by two gilling operations to complete the blending operation.

Drawing consists of a first operation on an I.F. can gill (Isotta Fraschini) and a second, third, and fourth intersecting operation on Warner & Swasey pin drafters and Saco-Lowell long draft roving frames.

A range of 8s to 60s are spun on Whitin and Saco-Lowell long draft frames with 12-inch traverse.

Spins yarn from 1½-oz sample

● EQUIPMENT which makes possible the determination of the relative spinning value of different cottons and blends from raw stock samples weighing as little as 1½ ounces, is reported to have been developed.

Referred to as a "miniature cotton spinning range," it was developed by the British Cotton Industry Research Association and consists of a card, drawing frame, and ring spinning frame.

The equipment is said to be very compact, designed to facilitate both setting and operation, and wide in its scope both with regard to the range of staple lengths it can handle and the counts—up to 140s—it can spin. Two samples may be tested in about an hour, it is claimed.

The equipment is not at this time available commercially. However, it is understood that if the demand for it warrants, the machinery will be manufactured under license for sale to textile mills.

Progress on Darlan dinitrile fiber

● B. F. GOODRICH Chemical Co. reports that Darlan*, its dinitrile fiber, is now being produced on a semi-works scale at the Avon Lake, Ohio, plant. Also, experimental work and development of fabrics utilizing the fiber, which was announced about a year ago, is proceeding.

Following are some of the properties of the fiber which are more completely described in Service Bulletin D-1 recently issued by the company:

Darlan is basically a very soft fiber, but at the same time it is most resilient. With a tenacity between 1.5 and 1.75 gpd, it fits into the medium strength range.

Having an elongation of 30% or greater and a softening temperature of about 350 F, Darlan retains a significant portion of its strength and is dimensionally stable at 320 F. It is a low moisture regain fiber and, therefore, requires a certain amount of static control.

The density of Darlan is among the lowest of the fibers. Its resistance to weathering, prolonged exposure to heat, mildew, insects, and acids is equal to or better than most other fibers.

Ease of ignition and rate of flame travel are similar to untreated cotton, acetate, and viscose rayon. Darlan fabrics melt-burn. The apparent ignition temperature is 892 F. Life hazards of the volatile combustion and thermal decomposition products under fire conditions are similar to the hazards from silk and wool fabrics.

Pastel shades may be produced on this fiber using disperse dyestuffs. Either disperse or cationic dyes with a carrier yield medium or deep shades. Azoic dyes developed with beta oxynaphthoic acid may also be used for deep shades.

The fiber has a limited affinity for vat, solubilized vat, and selected acid dyes, the latter when applied by the cuprous ion method. It cannot be dyed with direct, acid, metalized or chrome dyestuffs.

Effective bleaching may be accomplished with acidic sodium or calcium hypochlorite, or sodium chlorite.

*Trademark for a dinitrile fiber discovered at the B. F. Goodrich Research Center and developed and manufactured by B. F. Goodrich Chemical Co. It has vinylidene dinitrile as its basic constituent.

Improved selvage guide for slashers at Woodside Mills, showing components and threading arrangement at size box. This arrangement is duplicated on opposite side of size box.

Want less slasher waste?

Install this selvage guide and minimize breakouts

Staff prepared
Exclusive

WOODSIDE MILLS, Greenville, S. C., had trouble with selvage ends breaking out at the slasher when the immersion roll was raised to clear lap-ups. Formerly, waste due to broken selvage ends alone amounted to more than 50 pounds each week for six slashers operating on a three-shift basis.

Waste Reduced. An improved selvage guide has reduced selvage end breakage with a resultant decrease in hard waste from this source. Present hard waste attributed to selvage end breakage amounts to about three pounds each week for all six slashers on a three-shift basis. The slasher tender's job has also been made easier.

Slasher room personnel are impressed with the improved selvage guides which are credited with saving time, material, labor, and patience. The selvage guides paid for themselves in a few weeks of operation, and they have improved quality by reducing short warps and broken ends on finished warps.

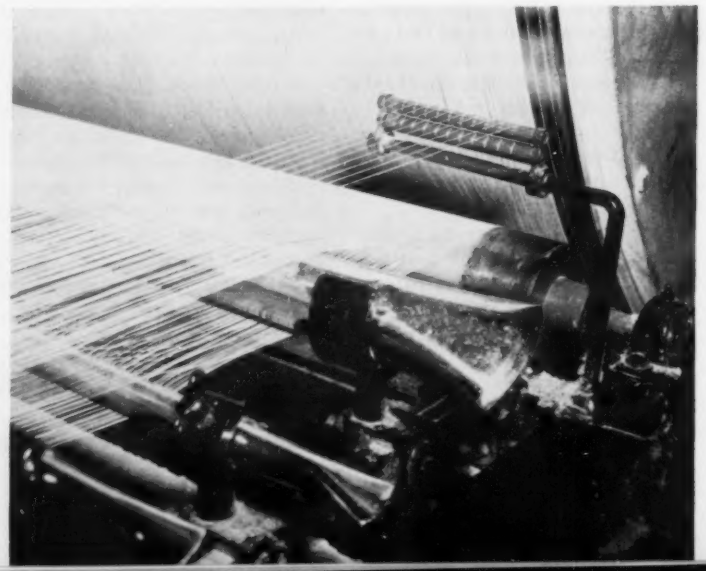
Slasher sets here range from 2488 ends of 30s cotton to 3218 ends of 30s run on two-cylinder steam slashers. Each set has 20 selvage ends (10 on each side).

Mill-Made. Several overseers in the plant collaborated in devising and developing the improved selvage guide which has proved satisfactory in cutting selvage waste to about 6% of the former level.

The devices were built and installed on the slashers by mill personnel.

Cause of Breaks. End breakage usually started when one to four ends lapped around the immersion roll. A chain reaction usually broke other ends. When the immersion roll was raised to clear the difficulty the selvage threads became slack, the cylinders quickly took up the slack, and more selvage ends broke from excessive tension when the immersion roll was lowered again.

This trouble happened about twice on each shift for each of six slashers, making about 12 break-



Selvage guide components are shown in this view at delivery end of slasher in operation. This is the front selvage guide. The device is duplicated on the opposite side of the slasher.

outs to mend each shift. Considerable time was consumed and production was lost while mending such breaks.

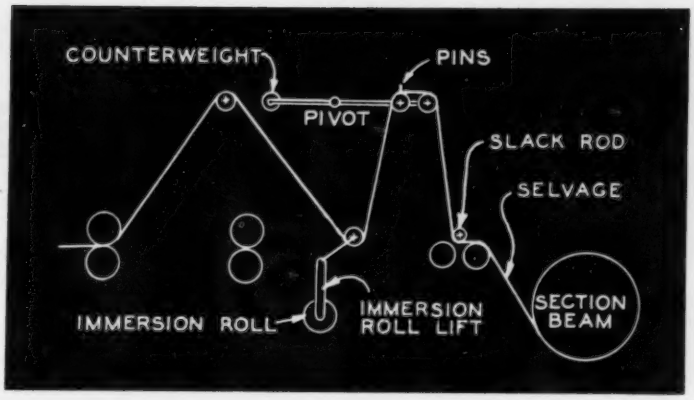
Now, about four selvage breakouts per slasher per year is the frequency, and the improvement is attributed to the refined selvage guides on all slashers in this mill.

Simple Device. The new guides (see accompanying illustrations) provide four long loops of selvage ends which are controlled by four rolls comprising the selvage guide and tension. Two other rolls at the front of the slasher keep selvage ends separated from the rest of the warp.

All rolls in contact with the selvage yarns turn freely to keep friction at a minimum through the guide.

Old Arrangement. Formerly, two stationary rods were used to support the selvage ends. Because the first of these was on the immersion roll lift and was too close to the size box, it got wet and sticky from steam and size. This difficulty often caused lap-ups and tangles when it was necessary to manipulate the lift.

A broken selvage end often lapped around the immersion roll, making a knot and breaking other ends.



Threading and parts of improved selvage guide developed and in use at Woodside Mills (not to scale).

Record Attendance at Blue Ridge Conference

Staff report

● MORE THAN 1000 industrial leaders met at Blue Ridge, N. C., July 18-21, for the 37th annual Southern Industrial Relations Conference. All previous attendance records were broken as a dozen prominent speakers discussed the facets of human relations.

Morris M. Bryan, Jr., president, The Jefferson (Ga.) Mills, Inc., admonished the audience to observe what people wanted most for good human relations:

(1) Appreciation of work well done.
(2) Being "in" on things.
(3) Sympathetic help with personal problems.
(4) Job security.
(5) Good wages.
(6) Interest in his job.
(7) Promotion and development.
(8) Personal loyalty of his supervisor.
(9) Good working conditions.
(10) Tactful discipline.

These elements comprise good human relations, Mr. Bryan said. Communications become the basis for friendly relationship, and friendly relationship becomes the basis for communications, he continued.

Creativeness is the greatest untapped resource of man, and this resource must be stimulated by using the ten "wanted" factors. Important questions to be directed for this purpose are as follows:

(1) How can we better use what we already have?
(2) How can we adapt what we already have?
(3) How can we modify what we already have?
(4) How can we magnify what we already have?
(5) How can we reduce what we already have?
(6) How can we substitute?
(7) How can we rearrange?
(8) How can we reverse?
(9) How can we combine?

A good procedure to use in solving problems is to get people together in small groups and try the question: What can we do? The idea is to change the crowd to a team. In doing this, there must be a purpose or a problem; those involved must know the "score," and all must have the feeling of counting.

The Christian opportunity provides the theme for good human relations, Mr. Bryan concluded.

TRAINING SUPERVISORS. D. H. Fincher, Southern Bell Telephone & Telegraph Co., Atlanta, Ga., spoke to the group on supervisor training. In a survey of supervisors, Mr. Fincher said the unfavorable comments received were as follows:

(1) Supervisors were unsure of identification with management.
(2) There was inadequate definition of authority.
(3) Communications were inadequate.
(4) Union-management relations were vague.
(5) There was insufficient under-

(Continued on page 161)

Tips on pick-and-pick weaving

by Calvin Lee
Exclusive

WHILE MOST box looms in place are automatic and are of alternate pick construction, current interest in fancy weaving draws attention to a loom feature usually associated with this type of work: pick and pick. It allows multiple cell shuttle boxes at both ends of the loom either to pick alternately or to make two or more consecutive picks from the same loom end, and as many as seven different types of picks can be woven in the same cloth.

Generally this work differs from alternate picking in the amount and accuracy of setting required. Here are some practical tips in handling the major loom motion involved in such work, picking, as they apply to 4 x 4, C & K non-automatic looms of the "S" series.

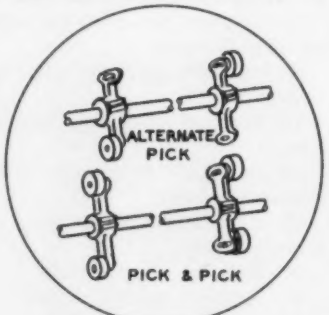
Differences. The main general differences between p&p and alternate pick work lies in the fact that in p&p there is no limitation in inserting picks from individual shuttles in two's or multiples of two. Alternate pick looms always have a single box at one end as is the case in 2 x 1 looms, and shuttles must always be returned to the same side before changing boxes.

In terms of loom attention, p&p work requires more setting of picking, checks, and box motion, basically because boxes on both sides of the loom move instead of just on one side. This additional motion also requires that binders get added attention because there are more of them and they must be set alike. In p&p, both picker sticks move on each pick of the loom and the sticks, picker shoes, and picker rolls therefore require more checking than in alternate pick work.

As far as the weaver is concerned, not much more attention is required in handling a p&p loom than with alternate work. If more than four shuttles are used he must know specifically in which box to place each shuttle. Outside of this, however, p&p can be considered a somewhat simpler weaving job when four shuttles are used because movement of boxes in pairs, rather than always having one box stationary, minimizes the possibility of smashes caused by the meeting of two shuttles in the shed.

In terms of loom assignment, the differences between p&p and alternate pick work can be illustrated by average loads in the Middle Atlantic States. Weaver loads are the same for both; fixers usually can handle 44 2x1's as against 36 4x4's. This of course depends on the type of work run. If the p&p work were very fancy without benefit of box multipliers, the load would be less than 36 looms.

When to Run P&P. Generally, it is probably wise to run a loom p&p only when necessary. If the loom is equipped for p&p, a change to 2x1 or 4x1 can be easily made in a matter of a few minutes by removing from opposed positions one of the two picking rolls



PICKING ROLLS

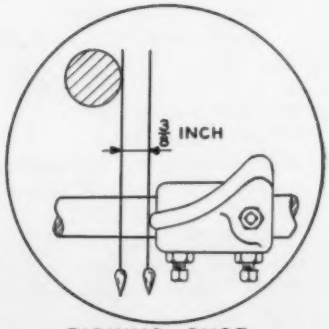
on each side of the loom. If the style being woven will run for a reasonable time, and requires only alternate pick weaving, work can be saved by making the change. On the other hand, if a plain filling (one shuttle) job raises some question as to "averaging out" yarn unevenness or shadiness, or if a good distribution of novelty filling effects such as nubs is required, it is often advantageous to run this plain job p&p.

While the change from p&p to alternate pick work is simple, this is not the case in converting, say, a 4x1 to p&p, particularly when a Gem head is in use. The reason for this lies in the inactivity of the chains which normally move the boxes but which are out of play. These chains tend to stretch at the rollers when not in use and throw the boxes out of level when reactivated. Care must be taken in starting up on p&p to correct for this, possibly by replacement of stretched links. This condition does not occur on draw heads.

MAINTENANCE HINTS

The setting procedure for 4x4 picking motions being run p&p is covered in the Crompton & Knowles "S" loom instruction manual (S-1). Following is a description of some of the implications of setting as viewed by a weaving overseer with particular emphasis on preventive maintenance, considering parts sequence in order from the picking shoe to the picker.

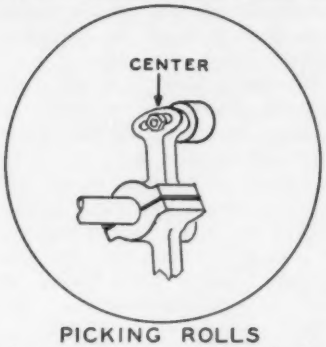
Picking Shoe. The nose of the



PICKING SHOE

picking shoe should be positioned 3/8 inch in back (towards the back of the loom) of the bottom shaft to prevent "shoving" the shuttle across the loom. The difference between easy picking and labored shoving of shuttle can be detected by feeling the lay with the loom in motion. One should not feel the loom quiver as the shuttle leaves the box.

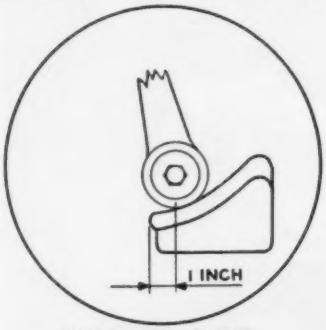
Picking Rolls. The rolls should be set in the center of the slot in the picking cam so that earlier and



PICKING ROLLS

later timing of shuttle ejection can be easily adjusted from a starting central roll position without adjusting loom timing.

Picking Roll to Shoe. The roll shouldn't hit the shoe at its front but should make contact about one

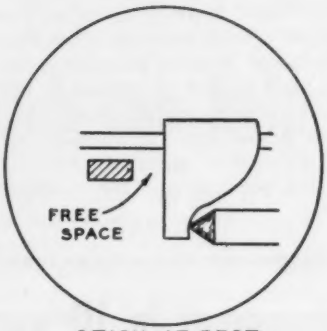


ROLL TO SHOE

inch in from this point. The goose neck should be used to make this adjustment.

Picker Stick. When the stick is at rest, there should be a free space between the stick and the end of the lug strap. The connection at the pivot of the stick can be used for fine adjustment.

When the picker is at the end of its sweep, the picker should not hit the bumper strap or choking

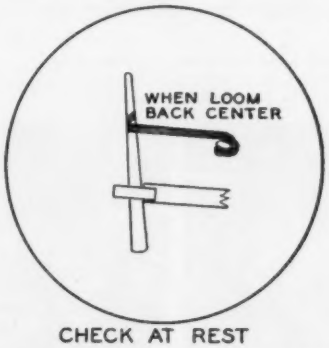


STICK AT REST

can occur. Choking stops the picker stick prematurely and will wear the stick and the bumper strap. Choking can also occur when the sweep arm is not level.

Picker Stick Return Spring. Excessive spring should be avoided on the stick. Too much spring will tend to cause double checking of shuttle where the stick can be observed to waver.

The Checks. When the running loom is at bottom center, the checks should be at rest or the



CHECK AT REST

check will push the shuttle out of the box.

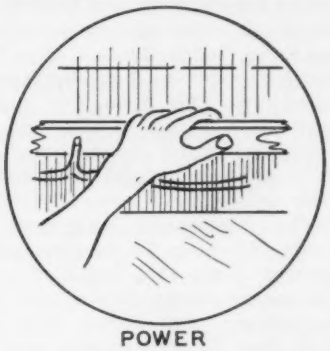
Picker Rods. These must be in a straight line with lay ends (paral-

PICKER RODS

lel). If not, they will throw the shuttle out of the loom or will fishtail the shuttle.

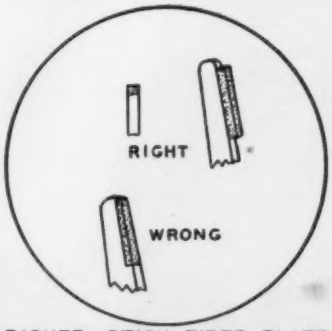
Power. If there is not enough power, the loom will bang off; if there is too much, filling can slough off and cause rough goods and filling breakage. This is something that can be felt when the shuttle enters the boxes. If the shuttle enters very fast, there is too much power and the lug strap will generally be found to be set too far down on the stick.

Insufficient power can be de-


POWER

tected at start up of loom when the shuttle has not enough momentum to enter the opposite box. This is especially noticeable when the loom is at front center and is usually caused by a poor friction. A good way to check for this is to take the shuttles out of the boxes and let the dagger of the protector hit the knock off dog. With the friction idling, start the loom. The start-up wheel should take up the pick right away or the friction is not right.

Replacing Picker Stick. Old sticks should be removed and



PICKER STICK FIBER PLATE

marked where the lug strap was. This mark should then be trans-

ferred to the new stick. A fiber plate is useful in saving wear on stick if placed on end of the stick at the contact edge.

Selecting Parts. A personal recommendation concerning choice of sticks is the use of hickory; it is felt that if there is a jam-up, it is better to have the stick break than the boxes. Another personal choice in the selection of pickers is (for 4x4 work) a combination fabric and rubber type. Rawhide picker rivets tend to break off, and this is not possible with the combination type. Also, combination pickers will not heat up; however, it is important to keep the spindle rods dry to prevent gumming up.

It is economical to use chrome leather washers for bumpers so that the wear is on the washer and not the bumper.

No jack spool replacement in 10 years at Strong-Hewatt

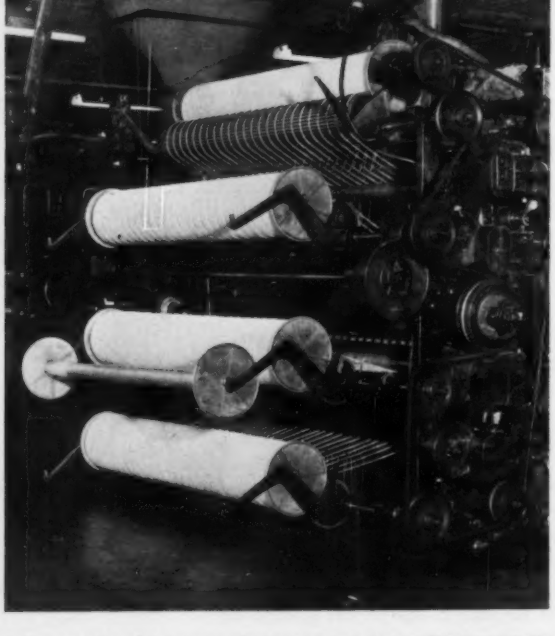
● AN INCREASING number of woolen system mills have been relieved of continual replacement and excessive maintenance of jack spools by using an improved type called the "Flex Spool," a jack spool which derives its name from a built-in spring flexing device which attaches the head to the cylinder. So says the Thomas Leyland Co., Inc., a subsidiary of the James Hunter Machine Co. and manufacturer of the Flex Spool.

A case in point is Strong, Hewat & Company, Inc., North Adams, Mass. Prior to 1945, various kinds of jack spools were used. Some were all metal; others had cylinders of wood with either metal or fiber heads. Yet no matter what type was used, every six months an appreciable number had to be replaced because of breakage, warpage of the cylinders, or bending of the heads. Maintenance was continual and costly.

Finally, all jack spools were standardized with the acquisition of one type — Flex Spool. "In the 10 year interim," states a Strong-Hewat executive, "not one of the original Flex Spools has been replaced. Maintenance costs are still practically nil." All are still in service, although additional spools have been ordered to accommodate expanded production.

Whether these spools are dropped, thrown or spun, the built-in spring gives to all stresses. Since there are no nuts, bolts or washers, there is nothing which can loosen, or needs tightening. Lightness of the spool makes transfer of roving between carding and spinning rooms labor-saving as well as mishap-reducing. The sturdy, corrugated or slotted cylinder is another feature, since it prevents warpage and splitting or marking of the yarn.

The heads of the Flex Spool are not fastened to the cylinder; instead, they are held firmly in position by the tension of a spring enclosed in the cylinder and fastened to each of the heads. The built-in spring gives to all stresses as shown by the operative in the left photo below. Note slotted cylinder of empty spool in the right photo.



Marketing research can help the industry

by Leland S. Liang
Werner Textile Consultants
Exclusive

THE IMPORTANCE of the marketing of textiles has increased greatly over the past three decades, and there is every reason to believe that it will become more important in the days ahead. With the prospect that more textile products will be produced, the marketing system may face an even greater task of moving these products from production to consumers and other users.

Not only will the physical volume of textile products to be distributed increase, but the job of efficiently apportioning these goods to markets will become more complex and costly.

To achieve the needed efficiency in the marketing of textiles, emphasis must be placed on Marketing Research. The marketing machinery must be lubricated by the scientific analysis of its functioning parts, so to speak, so that the various parts may operate speedily, harmoniously, and with a high degree of efficiency.

The products of the textile industry must move in the desired quality and quantity, at the right time, to the users and ultimate consumers of an exceedingly wide variety. It is no exaggeration to say that improvement in both textile manufacturing and textile marketing depends, in large measure, upon the use and development of Marketing Research.

WHAT IS IT?

According to the Report of the Committee on Definition of the American Marketing Association, Marketing Research is defined as the "gathering, recording, and analyzing of all facts about problems relating to the transfer or sales of goods and services from producer to consumer."

As such, Marketing Research is fast becoming a necessity, even for those in the textile industry who have operated on the rule-of-thumb fashion. When applied properly, Marketing Research can help eliminate, or at least minimize, business risks, and also make sounder business decisions. It will not, however, render decisions automatically.

APPLICATIONS

Channels of Distribution for Textile Products. One of the broadest and most important applications of Marketing Research is in studies of the distribution of textiles through the various channels, for here the largest share of the marketing costs is incurred. As a matter of fact, this knowledge is fundamental to practically all marketing policies pursued by textile mills.

An advertising program, for instance, would be hopelessly lost unless mill management knew exactly the channels of distribution of their products. Similarly, pricing, packaging, and methods of selling would be equally ineffective and would probably not be geared to the requirements of the situations unless the channels of distribution of the mill's products were known to the management.

In our dynamic economy, there are many factors which affect the trends of the channels of distribution for textile products, some of which are underlying in nature, while others exhibit temporary tendencies. A prerequisite for intelligent marketing management is to gauge accurately such shifting trends, and Marketing Research provides the tools for such an analysis.

Trends of Usage of Synthetic Fibers and Blends by End Uses. Another application of Marketing Research in the textile industry is in studies of the trends and developments in the use of synthetic fibers and blends by end uses, with their effects on the natural fibers. The existence of such trends is known to everyone in the textile industry.

The gathering and analyzing of information which will assist textile marketers in sizing up how fast the substitution of the various synthetic fibers is moving, in what direction, for which end uses, etc., is a painstaking job. If the trend curve is accelerating or flattening out, textile executives must know it and plan their moves accordingly.

Shift in Consumer Tastes in Textiles. One of the most perplexing things that baffles the textile executive is the shift in consumer tastes in textiles. One of the essential institutions of our economic system is that, outside of capital goods, products are usually turned out in anticipation of demand; any shift in consumer tastes, if not detected early enough, will result in unsold merchandise and accumulated inventories.

The past several years have witnessed drastic shifts in consumer tastes in textiles. Indeed, such shifts are constantly taking place, especially in an environment so conscious of its styles and fashion. For example, the recent trend of suburban living has brought changes in the clothing requirements of a large section of the population.

One effect of such a trend is that more casual, informal, and sports wear is being introduced in a large scale for the first time, to replace the more traditional type of clothing. A shift to less formal wear may have many marketing repercussions, for it may well require a new concept of clothing design, colors, new materials, and even a new channel of distribution.

Another effect is that fabrics of lighter weights are being used, affecting suits, blankets, sheets, dresses, underwear, etc. Such

changes naturally affect the weight and nature of the materials used, both of fibers and fabric, which, in turn, will affect the entire operations of the mills.

There are numerous examples that can be cited to show a shift in consumer tastes in textiles. The fashion of wearing dungarees by young boys and girls, the recent trend of the home sewing movement, the do-it-yourself trend, and others, all have far-reaching implications in the marketing of textiles and need to be gauged carefully and accurately, separating the short term from the long-run tendencies.

Probably it is the consensus that major changes in consumer tastes affecting the weight, fiber content, and kind of product are going on in the textile industry. To be able to size up such changes and measure their rates and effects is a horse of a different color.

Fortunately, Marketing Research techniques have improved greatly in recent years, so that there are now valuable tools at the disposal of textile marketers. Also, the coming of age of such things as Consumer Research and Motivation Research will most likely turn out to be helpful in studies involving shifts in consumer tastes in textiles.

CASE HISTORIES

It is safe to say that very few textile mills have used Marketing Research as a guide to marketing policies. Certainly, in this respect, the textile industry falls far behind other industries, particularly the chemical industry.

There are instances, however, where Marketing Research has been used with striking success, and the following three case histories should serve to point out its usefulness to textile management.

1. Woolen Jersey Mill. A woolen jersey mill, located in New England, has been selling its jersey fabrics to the cutting-up trade. The result is that there were pronounced peaks and valleys in its sales. Business was brisk from May through September, reaching the peak in June and July.

It tapered off after September, and fell precipitously after that, reaching a low point in December and January. The management wanted to find out what could be done to alleviate such a sales pattern.

A textile consulting firm was called in to study this problem. A marketing study showed, among other things, that this mill could conceivably utilize another channel of distribution, i.e., selling woolen jersey piece goods to over-the-counter trade.

The latter sales would reach a high point about the end of July as the cutting-trade season was about to slow down. Furthermore, the high point would continue through August and September and would not fall off as sharply as does the sales to cutters.

The lowest level would not be encountered until late March and early April. Hence, the addition of this market would tend to iron out the severe peaks and valleys of sales which this mill has to cope with thus far.

The opportunities to sell woolen jersey piece goods to the over-the-counter trade are the result of one of the many constantly changing patterns of textile distribution. As recently as a few years ago, over-the-counter distribution of piece goods was of minor consequence; but within the past couple of years it has assumed important proportions, no doubt brought about by the emergence of home sewing. The latter market has been estimated to be a billion-dollar business annually, with the sales of fabrics accounting for about 40%.

From a manufacturing point of view, it was found that a constant rate of production throughout the year at a desirable level was possible.

However, further investigation revealed that the existing sales personnel of this mill could not possibly cope with the many problems of selling to the over-the-counter trade, for various reasons. After careful consideration, it was decided that an established sales agent, familiar with the intricacies of selling to the over-the-counter trade, should handle the sales of this new line. Had the mill management attempted to take on the marketing task on its own, it would certainly have met with failure.

Through the use of Marketing Research, this woolen jersey mill has been able to overcome the difficulties which threatened to engulf its entire operations. It has found a way to level out the peaks and valleys of its sales by adding the over-the-counter trade. In so doing, however, it has not imposed upon its own sales force the impossible task of selling to a new market, as mills have done under similar circumstances, with disastrous results.

2. Blanket Mill. A blanket manufacturer, using selective distribution methods with national coverage, was anxious to increase his share of the market. He carried a complete line of blankets, including baby crib blankets. He reasoned that the increase in population should afford him the opportunity to sell more blankets. Furthermore, the "lay-a-way" plan, as many alert retail stores have found out, could capture a considerable amount of extra blanket business. He wanted to know which of his present distributors to keep, which ones to drop, and which others to add.

A representative sample of all types of retail outlets selling this particular brand of blankets was set up for each of the many marketing areas under study. From this simple tabulation, it was readily observed that there were areas where the manufacturer's share of the market seemed lower than it might be.

A questionnaire was then prepared, intended for interviews with retailers. The latter were asked such questions as:

Which distributors they were using.

Which distributors were giving them service.

How they rated each distributor.

How much volume they were doing with each distributor.

In this manner, a complete inventory of distributor popularity and their selling practices were thus obtained for the first time, and some of the findings revealed significant information which was hitherto unknown to the blanket manufacturer.

In some of the marketing areas,

the distributors who were highly thought of by the blanket manufacturer ranked rather low in terms of volume they were doing. In other marketing areas, certain distributors who were doing the best job, in terms of sales volume as well as other types of help rendered to retailers, were not recognized.

By analyzing intensely the activities of the present slate of distributors, it was easy to rate each one, and also to learn of the practices and policies being followed by each of them.

As a result of this marketing study, the good distributors were retained, the least efficient ones were dropped. New distributors, whose background and activities would fit the requirements of the blanket manufacturer, were added.

3. Cotton Mill. A medium-sized cotton mill, manufacturing both industrial fabrics and fabrics for apparel and household uses, was considering going into the production of nonwoven fabrics. The mill management wanted to know the answers to many questions, some of which were:

What problems would it face?

Who were the present producers of this product?

What kind of marketing organization would be required to get into this market?

What were the financial requirements?

What machinery would be needed?

An inventory of all the present manufacturers of nonwoven fabrics was obtained. These manufacturers were broken down by size, geographical distribution, and types of nonwoven fabrics produced, etc.

Then an audit of the practices, policies, problems, equipment, etc., of these producers was obtained. Under the auspices of a textile consulting firm employed by the mill, questionnaires were sent out and personal interviews were conducted with executives who were the customers for the various types of nonwoven fabrics. Interviewees included distributors, jobbers, purchasing agents, industrial users, and others.

When the marketing study was finished, a complete report was submitted to the mill management, detailing exactly what competition it would face, of what type, at what level in the channels of distribution, and where. The capitalization required, the machinery needed, the advantages and disadvantages of going into this market, the trends of the various facets of the industry, its profitability, etc., all were discussed and presented in detail.

Parenthetically, the mill management acknowledged that this marketing study saved it from plunging in the wrong direction, and further it admitted that it learned more in the six-month investigation than it could ever have obtained on its own accord by "tiptoeing around."

The marketing study pointed out that there was a specific phase of the rapidly growing field of nonwoven fabrics (requiring a different production method than the one generally used) that this cotton manufacturer could enter. There were certain "openings" no one else was covering adequately and for which volume seemed to be present, with a good prospect of increasing.

CONCLUSION

It is only fair to note that in the past the textile industry has made comparatively little use of Marketing Research, but because of the industry's heterogeneity its need for such research is unusually acute.

It is entirely possible that this neglect partly explains the fact that since the Second World War, in spite of generally booming conditions, the prosperity of the textile industry has always seemed to be precarious. In the struggle for the traditional share of the consumer dollar, now pegged at 7¢ compared to some 13¢ in 1939, the textile industry is still on the short end.

400,000 wool spindles in South now

● WOOLEN and worsted spinning spindles in place in the southern states (Del., Md., Va., W. Va., N. C., S. C., Ga., Tenn., and Tex.) increased from 261,594 in 1949 to 403,182 in 1955, according to a recently issued report prepared by the Textile Branch, Industry Division, Bureau of the Census.

Because of the over-all decline in equipment inventories during this period, machinery in place in the southern states as a proportion of the United States increased from 8 per cent in 1949 to 23 per cent in 1955.

In the New England states woolen and worsted spinning spindles in place declined from 2,016,659 in December, 1949, to 857,329 spindles in December, 1955—a decline of 57 per cent, the report indicated. This section's share of the total in place in the United States also declined during this period.

Here are some other data presented in the report:

1. Woolen spinning spindles in place as of December 31, 1955, totaled 817,820. This represents a decrease of 23 per cent from June 30, 1953, and 43 per cent from December 31, 1949.

2. Woolen spinning spindles in place at carpet and carpet yarn mills decreased 17 per cent from June 30, 1953, and 18 per cent compared to December 31, 1949, while the decrease for other mills was 25 per cent and 46 per cent respectively, for the same periods.

3. Worsted spinning spindles in place as of December 31, 1955, totaled 950,486 as compared to 1,651,356 reported as of June 30, 1953, and 1,836,744 as of December 31, 1949, indicating decreases of 42 per cent and 48 per cent respectively, for these periods.

4. In December 1955 there were 2,060 worsted combs in place, including 141 for recombing, 700 Noble, and 1219 other (French, etc.).

5. There were 142 machines for converting synthetic tow to top.

Moving day for spinning frames

How Cone Mills moved 32 spinning frames 400 feet

Exclusive

CONE MILLS had to move 32 Whitin Model F, 252-spindle, 3¼" gauge, filling spinning frames from the East end to the West of the White Oak filling spinning room, a distance of about 400 feet. The accompanying sequence of pictures shows how the frames were moved in a minimum of time. Ingenuity made the job appear simple.

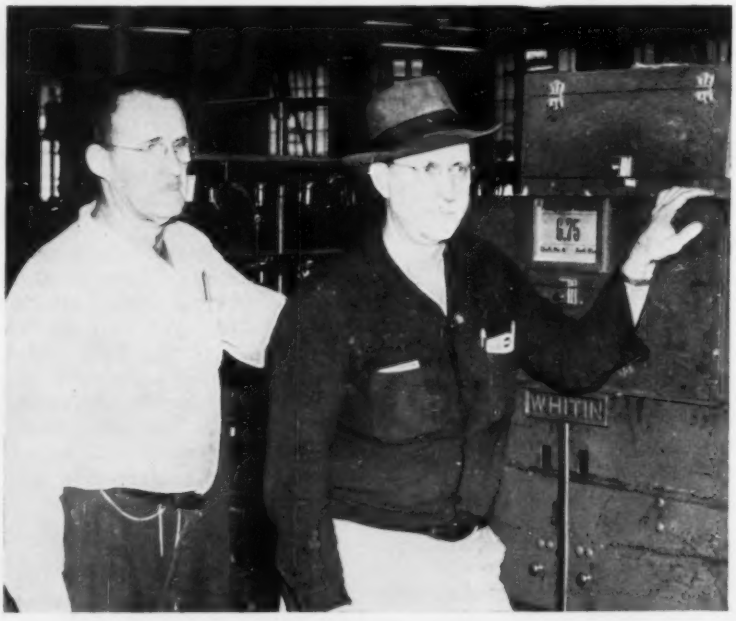
Top rolls and roving were removed from frames which were up for overhauling; however, the action observed in moving four frames indicated that the frames could be moved satisfactorily with the roving and top rolls in place by careful handling of the jacks. Most of the frames were moved with the roving on them.

When the frames were ready to be let down, the feet were set to a gauge to compensate for floor inequalities and lowered evenly, one side at a time.

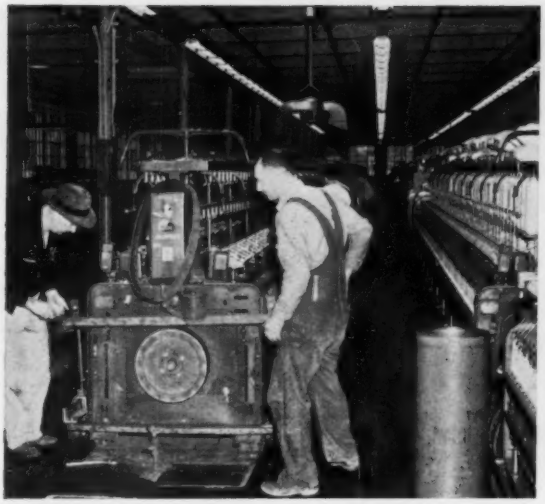
One frame per hour was moved by 12 men after they became familiar with operation of the rig and the 400-foot route.

The step-by-step procedure of moving the frames is shown in the picture sequences on the opposite page.

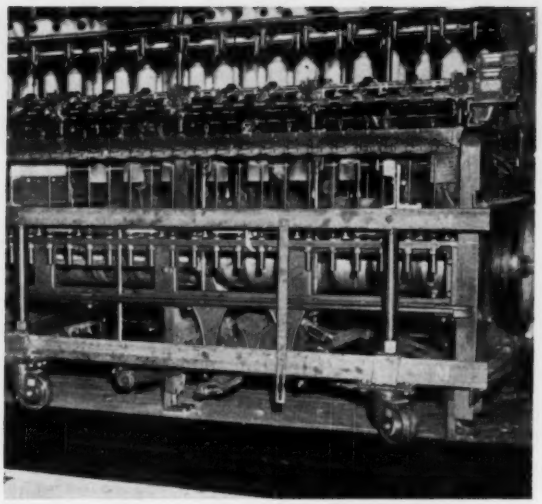
Spinning frames were moved on a rigging made of angle iron, with jack screws on each side, channels with oak bumper blocks to pickup under the roller beam, and swivel casters. After the frames were moved, the rigging was rolled back to the other end of the room, assembled as shown above, but with only part of the bridging in place.



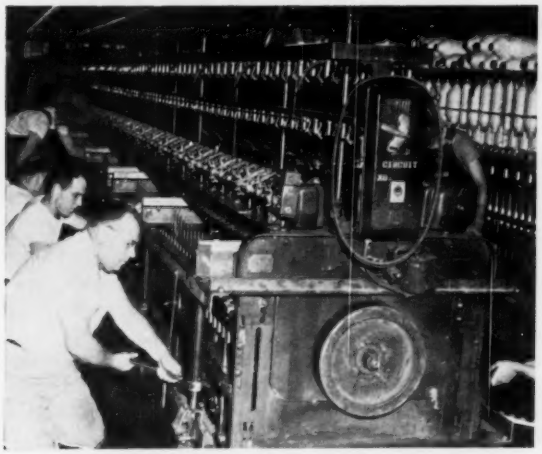
These are the men who did it. On the right is John Bettini, master mechanic of the White Oak plant, who devised and made the rigging in his shop. On the left is James Cain, foreman of the carpenter shop, who worked with Mr. Bettini in making the frame and moving the machinery.



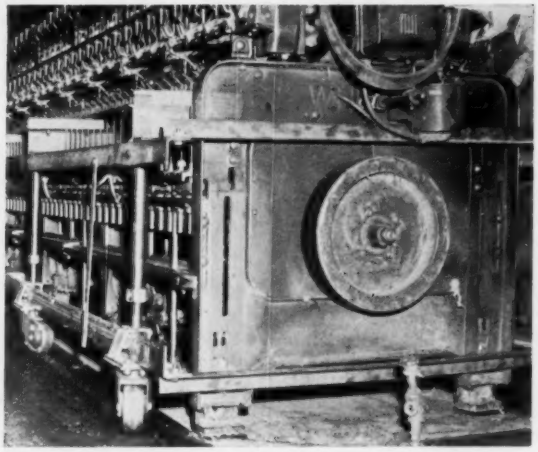
Rigging is set in on the frame, bridge pieces bolted together.



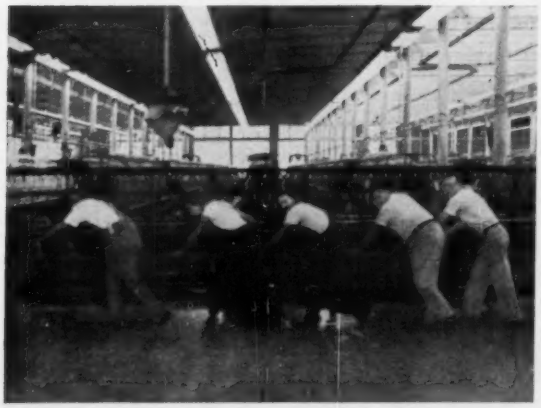
The rigging in position and before bolting looked like this.



Jack screws are raised ½"; one side of frame is raised at a time.



The filling frame shown above is jacked up and ready to go.



A frame on the way to the other end of the room, 400 feet away.

Set to new line. Note cart for hauling rigging parts to start.

Preparation includes facilities for dyeing small skeins (left), standard silk winding (center), and quilling (right). A dyehouse was added to the plant for efficient handling of large variety, small quantity lots with tough color matching specifications.

Diversification--old story to a novelty mill

Joseph Brandt & Bro. weave, knit, and braid with cellophane and other off-beat yarns

Staff prepared Exclusive

THE CURRENT trend to diversification by many mills normally devoted to producing just a few types of cloth is an old story to the so-called "novelty" mill. This type of operation is usually characterized by a silk system of preparation and weaving as a production base, but may very well have looms designed for any or all fibers, plus other types of fabricating equipment which are usually characterized by a silk markets change.

Such mills are usually small and are relatively few in number; a 100-loom novelty mill is considered large. Also characteristic of this type of mill is its proximity to New York markets, and the ability to get started and finished with a great number of production runs quickly and at the same time.

Ideas for styling are numerous and traditionally from abroad. They are either copied or adapted to local conditions; a novelty mill can and usually does use most standard fibers and a few that aren't in the book. Such efforts usually form the basis on which big-production cotton, woolen, and synthetic mills build their style lines a few seasons after the novelty mill introduces a new idea.

One such novelty mill, which is unique even for a type of mill which specializes in uniqueness, makes its home in uptown Manhattan, a 15-minute delivery haul to the New York cutting trades. The plant, Joseph Brandt & Bro., Inc., has for over 70 years been manufacturing cloth on three systems: weaving, knitting, and braiding, designed for the fashion, home furnishings, and theatrical markets.

OFF-THE-BEATEN-PATH yarns are basic to the diverse Brandt operation; cellophane is important among these, and is used because of its luster and translucence. It will, for example, make an attractive drape which permits light to pass through but still maintains privacy.

Cellophane is brought into the mill in ribbons about 1¾ inches wide, is slit into about 90 ends, and put up on spools. When woven or knitted, the material is not considered to be fragile.

As an outgrowth of the mill's cellophane experience, aluminum-based metallic yarns have also been used extensively in the mill. Unlike most mills running these yarns since their introduction about 10 years ago, Brandt uses cellophane laminated products. By doing their own slitting, as they do with cellophane, into somewhat wider widths than the 1/64 inch in common use, they are able to use the yarn in knitting and weaving, either warp or filling without supporting with nylon or silk. The cellophane lamination is preferred because it will absorb flameproofing finishes readily. Metallic yarns in finer slittings are often quilled over mineral oil wicks to assist in weaving.

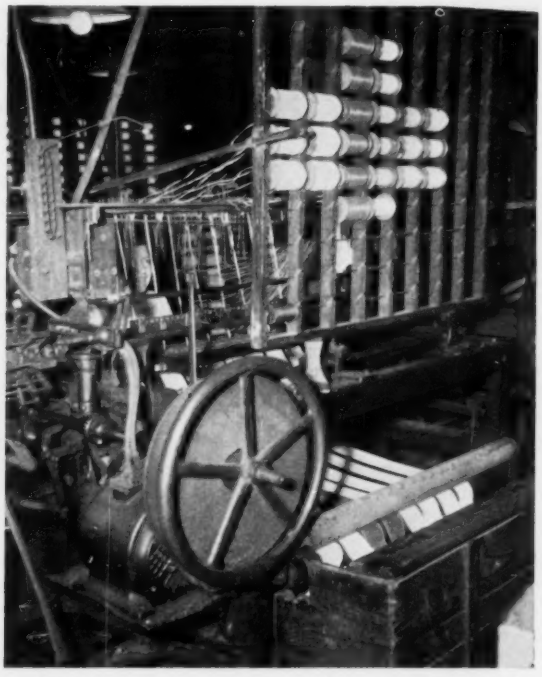
Some 50,000 pounds per year of a Swiss "artificial straw" are imported and woven into place mats, and shoe and bag cloths. The yarn is a modified rayon product. Chenille in sizes ranging from 6 cut (400 yards per pound) to 16 cut are also commonly used.

WEAVING at Brandt is done on

Slitting is done on this equipment at Joseph Brandt & Bro. by feeding a ribbon of either cellophane or aluminum-base metallic laminated cellophane, about 1¾ inches wide, at right, to knife rolls which make about 90 cuts, and finally winding up on bobbin creels at left.

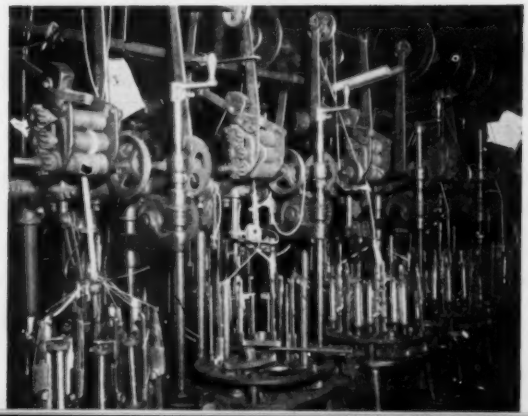
Gimper winds a flat yarn around a soft core. Most gimps are metallic; are used to give cord effect in woven fabrics.

Looms are run slowly and work load is one loom to a weaver, because of the big variety of coarse and unusual yarns used. This is a cut-down "W" loom; warping is done on the silk system.

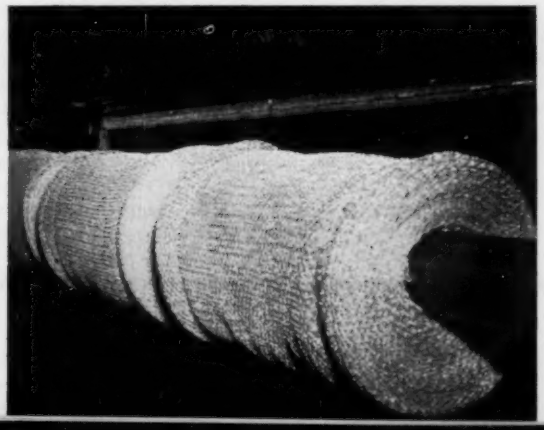


Tisch machine throws a coarse straw "filling" across the width of a number of ribbons, which are bound at their edges by knitting needles. This output is used to make artificial flowers.

Tubular braiders were once used to produce millinery braiding, an original specialty of the mill; now produce display braids.



Raschel knitting is centered at present principally on production of a variety of metallic meshes for shoes and millinery.



a one-loom-per-weaver basis; 4x4 W-1's and W-2's are used with speeds cut down. Much of the production from these looms has a hand woven appearance because of the coarseness of the yarns used and the combination of various types. One fabric, for example, includes spun rayon, metal, and cellophane.

RASCHEL EQUIPMENT is used to turn out a variety of metallic meshes used for shoes and millinery, and Tisch machines are used to make wide band trimming from a variety of material, notably artificial straw.

Millinery braiding, an original specialty of the mill, is done on both tubular machines and flat fine ligne braiders. Considerable production is currently devoted to display braids.

Confessions of an economically uneducated man

Anonymous*

● WHEN the editor first asked me to write an article saying what I thought about the free enterprise system I told him, "Why should I stick my neck out? Sure, I've got some ideas but I don't know how my boss would take them; and, Mister, I've got two kids to think about."

But after the editor promised that my name would be kept secret and explained that I might be able to do some good, I agreed to go along.

Writing isn't my line but I do read quite a lot. Every once in awhile I read free enterprise propaganda in advertisements and in booklets that the company puts out. Some of the ideas I see there are good. Actually, deep down inside me, I believe nearly all of it, but somehow, the way it is worded always makes me want to say, "Oh, yeah?"

The trouble—at least the way I see it—is this: free enterprise really is everybody. It's all of us, including me, and all the things we do in the work-a-day world, and I want to be counted in as a part of it. I want to be talked to like I was on the team.

Now nobody could ever make me believe that any business exists just to make life easier for me. I know why people are in business.

UP TO A certain point, I don't mind being told that I owe my job to the free enterprise system, and that high taxes and too much government are bad for the system, and that no man in my position anywhere else on earth could drive a car and own a television set like I do, and that as a customer I am the boss who decides what kind of product a company can make and what price the company can charge. That's all well and good. I wouldn't argue about it. But why doesn't Mr. Business give me the rest of the story? Why doesn't he level with me?

Instead of talking only about the advantages I get from free enterprise, why doesn't he mention what he gets too, so that it's a story of what we share together?

Doesn't he know that I expect him to be thinking of himself first of all, just as we all do, and that I have no objection to his profits just so long as he didn't get them by taking unfair advantage of me or anyone else?

Most of the free enterprise articles I see are written as if we readers were expected to forget about profits and just think about our own blessings. Well, that's not good enough for me.

Here's the way I'd like to be talked to — I'd like to hear Mr. Business say:

"This free enterprise partnership has been mighty good to me the past year. . . . Profits up 5 per cent. . . . Prospects even better for next year. . . . Isn't that a marvelous new widget they have added without extra cost to all the new model cars? . . . Hope your wife gets as much pleasure as mine does out of that new fabric. . . . Costs less than the old kind, too. . . . We don't have to worry so much about television ruining our kids eyesight now that we are getting such larger and brighter screens at the same price. . . . Glad to see the wage end of this partnership holding up so well, too. . . . You deserved that 5 per cent raise this year. We've got a great system, haven't we?"

I'M SURE there are better ways of saying it than that. It's the attitude I am thinking about—the idea of teamwork—the idea that I belong.

Some of our politicians could teach Mr. Business a lesson. They talk my language. They know how to look at things the way I do and see how I feel, and what I really want. They make me feel at ease, and not like I owe them something just for the sake of being associated with them.

I don't agree with Mr. Politician when he says big business or any other kind of business is ruining the country. I don't want to see government take over business. I'm no Socialist. Mr. Politician knows that, too. You notice he never tells me that free enterprise is bad.

Why do I vote for him then, you might wonder. Well, I'll tell you. Sometimes I just can't help it. I do it against my better judgment, because even in spite of what I know and what I believe in, the guy makes me feel that he is able to see things my way when he wants to, and that we are sort of partners in the business he is engaged in, and that therefore in spite of his faults I might as well go along with him.

But if I were looked upon more like a partner in the free enterprise system I would probably feel like keeping better political company.

*Reprinted from "Washington Report" published by Chamber of Commerce of the United States.

Cost-conscious mill men are headin' for Greenville....

THE PRODUCTS of 325 suppliers to the textile manufacturing industry — including textile machinery, equipment, and materials required for processing — will be available for your inspection at the Southern Textile Exposition which is to be staged in Textile Hall in Greenville, S. C., next month.

Opening on Monday, October 1, the 19th biennial "Greenville Show" will close on Friday, October 5. The hours will be 9 A.M. to 6 P.M. each day.

According to information furnished TEXTILE INDUSTRIES by the exhibitors, a wider variety of machinery and equipment will be on display this year than usual. A large number of the major U. S. textile machinery manufacturers are participating in the show, and a few overseas textile equipment builders will exhibit their wares.

For complete details about the show, including a list of the exhibitors, what they will display, their representatives to attend, a handy floor plan of the exhibition hall to assist you in locating your supplier friends, and photos of much of the equipment to be there, see the October issue of TI.

HOUSING. Arrangements have been made to accommodate all who are planning to attend the show, both mill men and suppliers' representatives. Since the 1954 exposition many new and attractive motor courts have gone up in the Greenville area, supplementing hotel accommodations; and hotel and motor court facilities in Anderson, Clemson, and Spartanburg, all within 33 miles of Textile Hall, are also being drawn upon.

If you have not already made your reservations for rooms, do it now — write to the Secretary of the Rooms Committee, care of Textile Hall Corp., P. O. Box 1323, Greenville, S. C. Don't wait any longer.

ADMISSION. Complimentary season passes for mill executive and supervisory personnel are being distributed by the exposition management. If passes have not been received at your mill, send the names of those planning to attend the show to Miss Bertha M. Green, director, Southern Textile Exposition, P. O. Box 1323, Greenville, S. C.

Tickets good for one admission to the exposition may be obtained from representatives of suppliers who have contracted for space in which to display their products.

TRANSPORTATION. It's easy to get to Greenville, whether you prefer to travel by auto, train, bus, or plane.

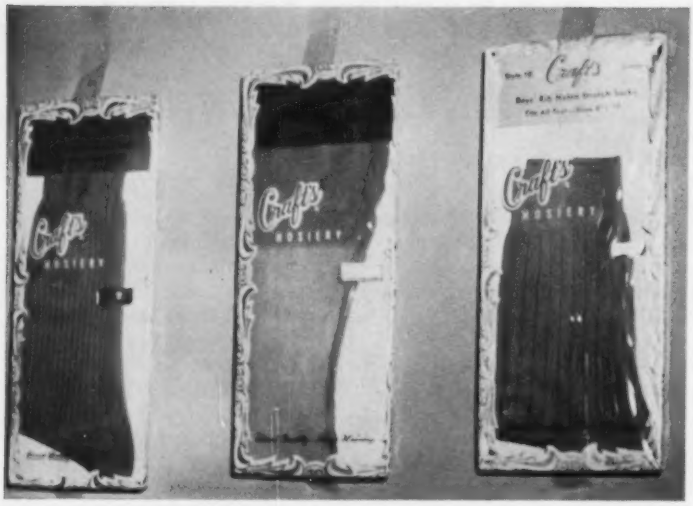
If you plan to drive, check your road map and you will find this northwestern South Carolina city at the junction of U.S. highways 25, 29, 123, and 276.

Local passenger representatives will gladly furnish schedules if you contemplate travel by air, rail, or bus.

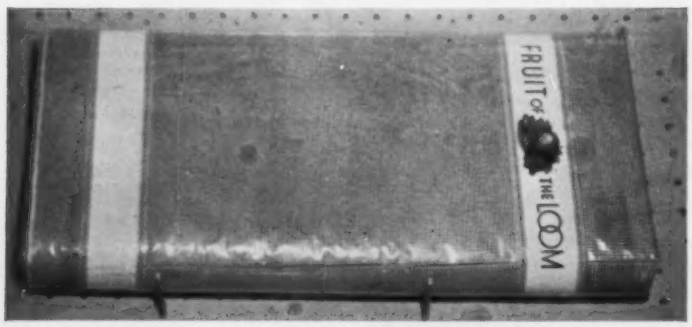
. . SEE YOU IN GREENVILLE!

Prepackaging -- that's the trend in textiles sold

End folded packages are shown here in a variety of sizes, uses, and paper coverings.



Unfolded packages are used for flat items such as this footwear.



Piece goods, doubled and rolled, are commonly packaged like this.

Staff prepared Exclusive

PREPACKAGING originated in the foods industry as a part of the supermarket process: Shopping is made convenient by displaying merchandise in such a way that it can be picked up and brought to a cashier for payment. In many cases it is important for the buyer to see what is in the package, but in any event the product must be attractively and functionally packaged by the supplier or manufacturer to influence selection.

This trend has extended to many fields other than foods; textile mill products now commonly prepackaged include pillow cases, sheets, socks, stockings, sweaters, curtains, underwear, wiping cloths, and doubled and rolled piece goods.

In addition to the self-service motivation for prepackaging, soilage prevention at the mill, in transit, in storage, and at the retail counter is also important. In the case of infants' wear, mothers prefer to select a protected item from a busy counter.

The Converter. To assist in the proper application of prepackaging, the part of the film converter has become an important one. He is versed in the raw material of the process—film. He also knows what catches the shopper's eye in terms of package decoration.

Converters serve to supply the printed transparent film generally used in prepackaging. They purchase the film from one of three major suppliers, advise the mill on which type of film and package to use, make suggestions as to style of decoration required for a particular product, supply a proof of the printing ordered; and, finally, print and deliver the rolls of film.

The Materials. Prepackaging films vary considerably. They in-

at retail

clude cellophane, polyethylene, vinyl, Pliofilm, glassine, foil, and kraft. Most textile mill products are prepackaged in transparent film. Where doubled and rolled piece goods are to be shipped to textile converters, it is a common practice, however, to machine-wrap and glue, using kraft.

Cellophane, Pliofilm, and vinyl are clear; polyethylene is translucent. Generally, prices on most films are competitive in jobs for which they are best suited.

Another characteristic of these materials is thickness, selected usually on the basis of how tough the package must be. Cellophane is available in two basic types, either moisture proof or air permeable. Where strength and long shelf life are needed, polyethylene, vinyl, and Pliofilm are best suited. Polyethylene is extensible, and cellophane is the most machineable of all the transparent films.

The Package. Prepackaging is performed in one of two basic ways: The item is either placed in a bag or it is wrapped. Regardless of the method chosen, closure is generally effected by heat sealing.

Bagging is generally an intermittent process, consisting of automatically making a bag from a roll of film, packing the bag by hand on some device which acts as a funnel for the product and as a bag holder, and closing the bag through some device which supplies the heat required to seal it.

Wrapping is generally a continuous, automatic or semi-automatic process which can be adapted to a wide variety of put-ups. There are two main types of these put-ups: end fold and underfold. End folding consists of overwrapping the film around the item and folding both edges of the ends against the end of the product and sealing them in place. This type of wrapping is done on products such as sheets, piece goods, and other bulky items.

Underfolding is done where the packaged item is low, such as is the case with socks, ribbon on a card, and underwear. It also starts with overwrapping, but in place of an end fold the ends are tucked under and sealed.

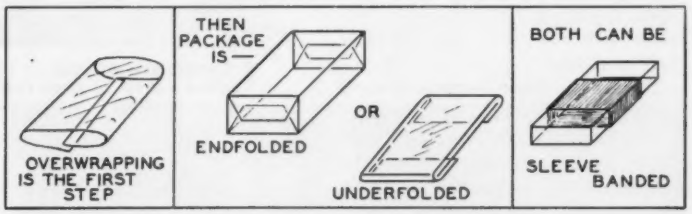
To achieve rigidity, both types of wrapping are often sleeve banded with a variety of materials. These sleeves generally fit around the package in the same manner as does a chewing gum wrapper, but sometimes part of it is cut away.

Wrapping Machines. Production at the mill on one specific item is usually not high enough to obtain a wrapping machine designed to package only that item. However, machines are manufactured that are adjustable to wrap a variety of package sizes.

Basic machine features common to automatic equipment are:

1. An in-feed conveyor on which the item to be packaged is manually or mechanically placed.
2. Film or paper feeder which feeds a predetermined length from the roll and cuts it.
3. A folding device which wraps the cut film around the in-fed item.
4. A heat sealing device to close the package.
5. A delivery table or other receiver for the finished package.

In a fully automatic set-up, speeds range from 20 to 25 packages per minute in the case of a big unit such as a doubled and

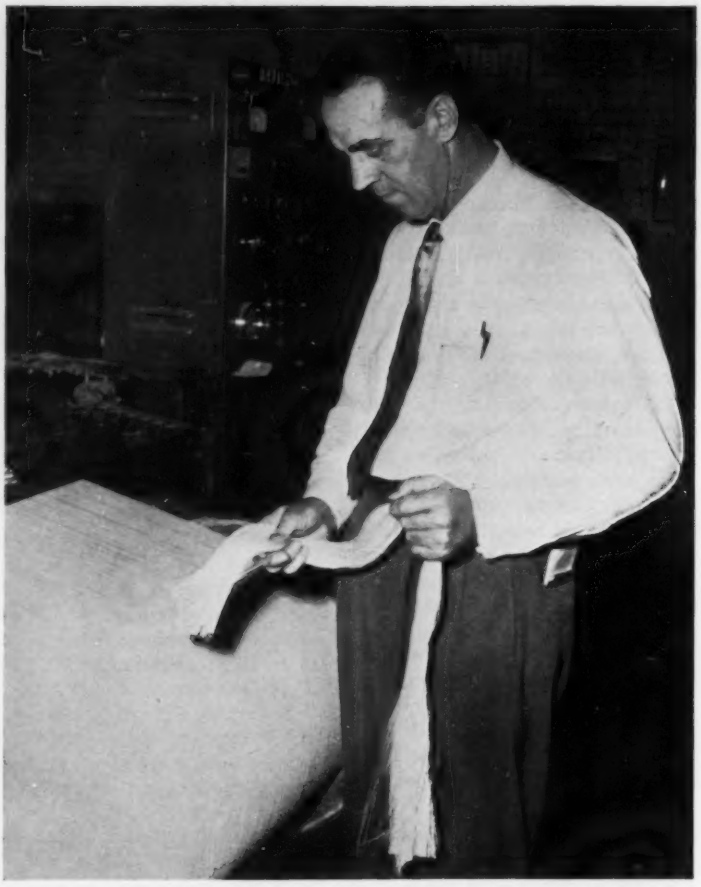


Knit jerseys are packaged here using an underfold wrap. Folded article is placed on in-feed conveyor (A), cellophane sheet is fed to folder (B), folder wraps the cut film around the jersey (C) [not fully shown], package is heat sealed (D), and finally delivered to table (E).

Warp sizing

*Article 5**

by Paul V. Seydel, D.Sc.
Seydel-Woolley & Co.
Exclusive



Softeners are difficult to evaluate mechanically or in the laboratory. Feeling a skein of sized yarn by an experienced person is still the best known method.

Materials for Sizing (continued)

Lubricants and Softeners. Lubricants and softeners will be considered together, not because they are the same—far from it—but because most materials that act as one have some qualifications as the other. It should be kept perfectly clear that the two qualities are not interrelated—that a good lubricant is not always a good softener, and vice versa. This is too often confused in the minds of some persons considering sizing, simply because many of the fats, oils, and waxes actually used have some of both qualities.

Two of the more commonly used materials, however, will serve as examples of this fallacy. Glycerin, a very good softener, has very little lubricating value for a starch film. Mineral oil, probably one of the best lubricants, has comparatively little softening properties.

Lubricants are substances used to minimize friction between surfaces moving in contact with one another. Softeners are substances used for the purpose of giving a soft handle to the warp and the size film, and to decrease the brittleness of the film through a plasticizing effect.

Efficiency of Fats. It is obvious, then, that the value of a size mix cannot be judged simply by the amount of fats in it. One must also know what fats it contains and what purpose they serve. The analysis of a compound for this purpose is extremely difficult or practically impossible with present-day methods. The relative efficiency of various fats for sizing purposes varies a great deal, as their cost may also vary from two or three cents up to a dollar or more a pound for special waxes.

In the case of starch or starch-gum based sizes, the effect of the specific fat on the starch film must also be considered. Too much of certain types of fats, such as tallow, will produce a weaker, more brittle film, through an action very similar to the "shortening" of biscuits with butter.

Whether a fat is saponifiable or unsaponifiable has no relation to its effectiveness, either as a lubricant or as a softener. There are good and bad fats in both classes. Much more important is the melting point and the viscosity of the fat. Cotton itself contains from 0.5 to 0.8% of fats, an amount about equal to that added through the normal size formulas. Of this about two-thirds is unsaponifiable.

However, nature intended cotton fats for protection of the fibers, rather than for sizing purposes. And their melting point is too high (about 160 F) to be of use to us. If we can soften the cotton fats by addition of a lower melting fat, they can also be brought into use for our purposes.

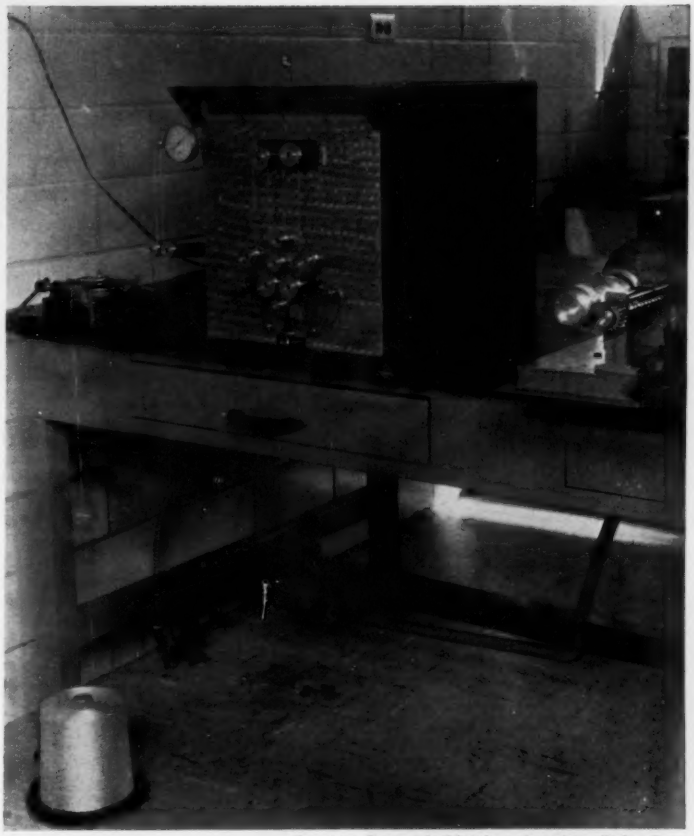
The spinning oils used in cotton processing will serve to some extent to soften the cotton waxes, and will help the weaving operation by their presence—although at the same time, they make it a little more difficult to get proper adhesion of the size film.

*This series of articles which deals with all phases of the warp sizing operation for cotton yarns and yarns produced from man-made fibers, began in the May, 1956, issue of TEXTILE INDUSTRIES. Reprinting of the entire series in book form is planned.

In the case of rayon, which has no natural waxes, there may be coning or processing oils on the yarns. These are quite different in their properties from the cotton fats. They are generally excellent lubricants, having been designed for that purpose, but their presence on the yarn surface may interfere to some extent with the adhesion of the size film, particularly if they are present in large amounts, as they may be with certain types of yarns.

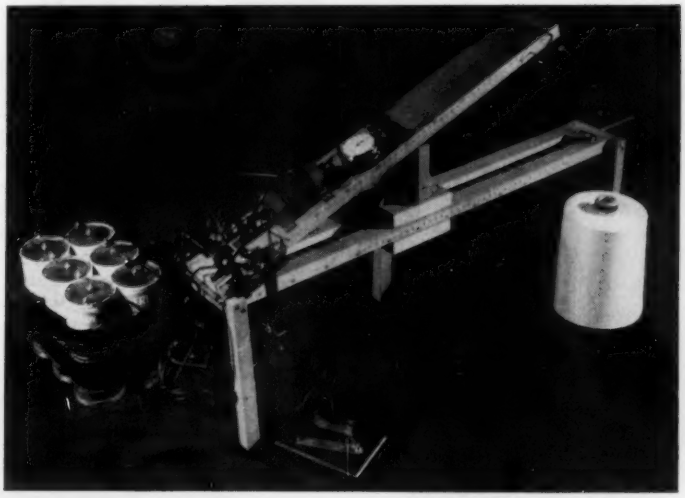
Just as a light spindle oil should not be used in engine cylinders, so a fat with poor viscosity should not be used for lubricating sized warps. On the other hand, a fat with too high a melting point will not flow enough to lubricate, nor can it act as an efficient softener, if it is hard itself.

The purpose of a lubricant is simply to reduce friction between adjacent yarns and between the yarns and the reed, heddles, drop wires, and shuttle, thereby increasing resistance to abrasion. Oily lubricants will come to the surface of the size film to a certain extent, and will in addition rub off in minute quantities on the heddles and reed, protecting them from rust. They may also help to prevent sticking to the drying cylinders of the slasher.



Courtesy Research Division, American Enka Corp.

The Breazeale friction tester is used extensively for evaluating coning oils and other yarn lubricants.



Courtesy Nopco Chemical Co.

The yarn friction tester, useful in testing sized yarn.

Softeners Reduce Abrasion. Too much lubricant must be guarded against, as it may decrease the friction between the fibers of spun yarns, with a resulting loss of breaking strength.

In contrast to the action of lubricants, softeners may reduce abrasion resistance of the yarn, through softening or weakening the starch film. Softeners have several different functions in the size mix. One is to reduce the harshness of the warp, giving the proper feel to the yarn. This reduction in harshness decreases the friction between yarns and gives less chafing at the drop wires. (This is a different type of friction decrease than that produced by lubricants.)

Softeners reduce the stiffness and brittleness of the film, giving a better hand and at the same time making the size film more pliable. One effect of a good softener is to facilitate the separation of the yarns at the lease rods, decreasing the amount of fibers pulled up from the yarn surfaces at this point, and allowing the preparation of a smoother yarn.

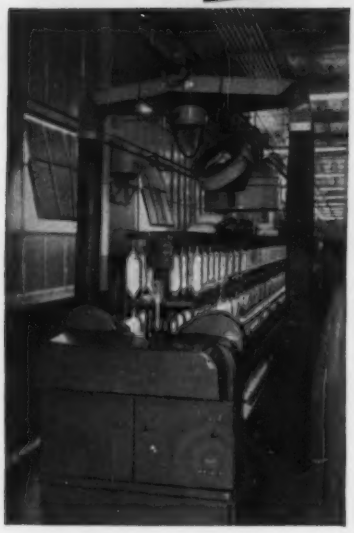
The continuity of a starch paste or film is decreased by the pres-

Now! MONORAIL Cleans--

Frames, Underframes, Ceilings From Track or Creels

1

New type underframe cleaner applied to standard cleaner units traveling on Monorail track.

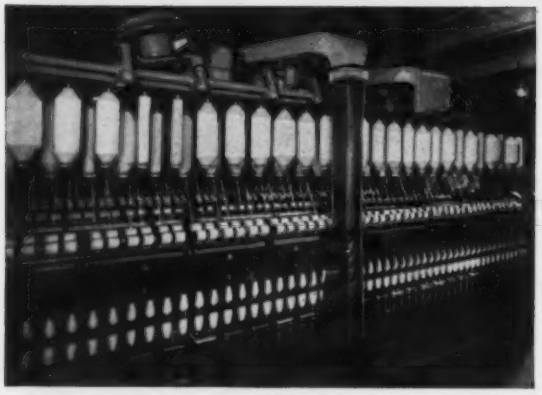


3

Underframe unit mounted on old cleaning system to complete cleaning operation.

2

Creel mounted units clean ceiling, frame, and underframe.



Standard units for cleaning the upper part of frames—underneath the frames, and the ceilings—each individually designed to perform their particular operation.

These units can be designed for travel on either Monorail overhead track or on creel mounted Tri-rail track.

Similar automatic units are also available for cleaning weave rooms by means of single Monorail tracks over rows of looms or on crane-type units for multiple row loom cleaning.

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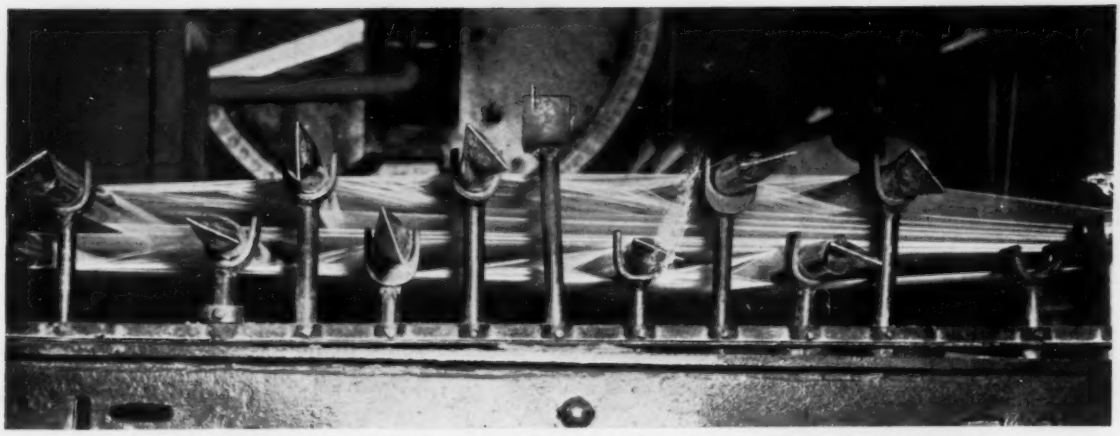

One effect of a good softener is to facilitate the separation of the yarns at the lease rods.

ence of softeners, resulting generally in a weaker film. This phenomenon is easily studied in the laboratory. Films cast of pure starch on glass or on filter papers will be smooth and continuous. A small amount of softener will not change this, but large proportions will give a film which forms cracks on drying, and the film does not hold itself together. Such an action will lead in the mill to increased shedding tendencies.

Formation of films or gels seem to be due to an interlocking of the long molecules of such materials as possess these properties. Probably the presence of these softeners in coming between the starch molecules prevents the interlocking or molecular adhesion of the starch. Although this is a disadvantage as far as film-forming is concerned, it works to some advantage in thinning the size mixes, and with many softeners in decreasing the tendency of the starch pastes to gel too rapidly.

An excess of softener will usually greatly increase shedding, probably through a "shortening" effect on the starch paste, decreasing its adhesiveness and film continuity below the danger point. On the other hand, an insufficient amount of softener may be the cause of shedding, through having too brittle a size film.

Continuity of a gelatin film is not as readily damaged as that of a starch film. Proportionately larger quantities of softeners may be added to the gelatin, and often are. However, the same general principle applies—the amount of softener should be adequate, but an excess will cause more harm than good.

Lubricants are generally fats, waxes, or oils, or blends of these. Softeners include these materials, and may also be soaps, sulfonated oils or fats, alcohols (such as cetyl alcohol and glycerol), etc.

Strictly speaking, "fats" are solid glycerides. However, the term is used in sizing in speaking of ingredients of an oily or greasy nature that either lubricate or soften. "Waxes" are unctuous, fusible solid substances of an organic nature, having a characteristic waxy luster. The term is vague and indefinite, including many types of esters, hydrocarbons, alcohols, acids, and mixtures of these. "Oils" are simply liquid fats or waxes.

Sizing fats are designated as saponifiable and unsaponifiable. The term saponifiable means that a fat is convertible into soaps—this includes the fatty acid part of glyceride molecules, such as tallow, and of other esters (e.g., spermaceti). Unsaponifiables include hydrocarbons, such as mineral oil, pine oil, and waxes, and the various organic compounds that occur in cotton fats and other plant extracts, such as aliphatic alcohols, cholesterol, etc.

The fats, oils, or waxes which are used with gelatin sizes, with polymer sizes, or with very thin starch mixes, must be self-emulsifiable. While a heavy starch mix will of itself disperse any meltable fats or waxes, and will also help disperse them in the desizing operation, this is not true with the other film-forming ingredients mentioned.

Further, with gelatin, these emulsifiable fats must give sufficiently stable emulsions to overcome the effect of the impurities in the gelatin. Many gelatins contain a small percentage of calcium salts, which will form insoluble calcium compounds with soaps and with certain of the sulfated fats. These may float on the surface of the size and cause spots on the filament warps.

In the case of light starch-based size formulas, such as those encountered in sized terry cloth, the viscosity of the mix is too thin to disperse un-emulsified fats. Even certain emulsions, which have a border-line water dispersibility in plain water, may not be as easily dispersed in a thin starch mix, because of a sort of salting-out effect.

Tallow. Tallow is the time-honored size ingredient for softening and lubricating. While it is admittedly a valuable ingredient for both purposes, in its venerable position it is highly overrated in comparison with many other fats. The main reason that it got its foothold in the size market was that in the old days it was difficult to get regular supplies of other fats at reasonable prices. Since it was "good enough" it has held on to this day, but its valuable quali-

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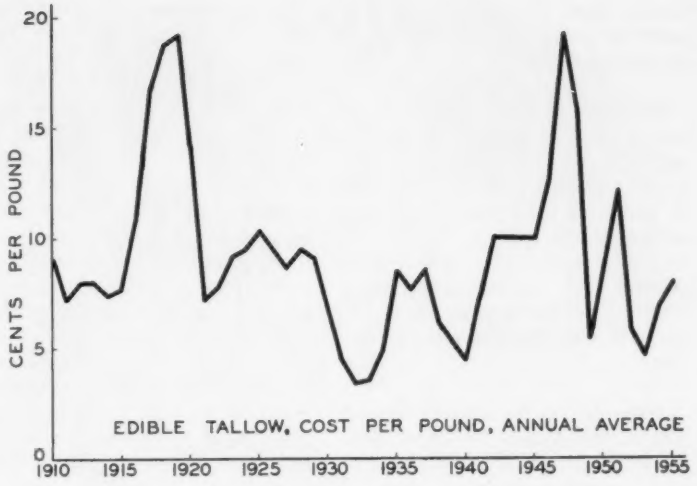
ties may be increased by blending with other fats which are better lubricants and softeners.

Another disadvantage of tallow is its extreme price fluctuation for the same grade of tallow. The accompanying chart gives price variation over a period of several years.

Tallow is composed of the glycerides of stearic, oleic, and palmitic acids. Its melting point is dependent upon the proportions of these and will vary about in the range of 80 to 110 F, according to the origin, the climate, and the conditions the animals have lived in. Cattle feeding on grass produce harder tallow than cattle feeding on food such as oil-cake. Mutton tallow is harder than beef tallow, which in turn is harder than chicken tallow.

Tallows are graded according to quality, and several grades are on the market, from edible—the best—to very low grades of inedible, poor both in color and composition. For use in sizing, tallow should be carefully rendered so as to be reasonably free from odor, color, and fatty acids. Since there is no restriction on what can be sold as inedible tallow, it often includes bone grease, horse tallow, hog fat, etc.

Low grade inedible tallow is rendered by putting scraps into a large pressure kettle and cooking them out under pressure for a number of hours. At the end of this time, the fats float on top and are drained off. Since the scraps often contain portions of meat, bones, etc., and since they often are allowed to remain in hot temperatures for many days before being rendered, a poor grade of grease is produced, usually running very high in free fatty acids due to decomposition before being rendered. Also, the viscosity is usually low due to the presence of the thin oils extracted from the bones and miscellaneous fats.



Edible tallow, salable as a food product, is controlled by the government, which imposes very strict supervision, rules, and regulations upon its manufacture. Only fats from certain parts of healthy cattle can be used for edible tallow. The temperature and length of time these can be kept before being rendered and the procedure in rendering is specified.

The very best portions of the scraps, free from bone and meat, are used. These must be kept in a refrigerated room, preparatory to rendering, to keep down decomposition, and the tallow must be rendered in steam-jacketed, open kettles, which prevent the breaking down of the product through high temperatures and pressure. These precautions make it well worth while for the manufacturer to pay the difference in price between inedible and edible tallow, particularly for the sake of uniformity.

"Industrial fancy" tallow is produced under conditions similar to edible tallow, without government supervision, and with only slightly higher impurity allowances.

Lard. As in the case of tallow, the consistency of lard depends upon the habits of the animal. Lard from the wild hog has much more body than that of the domestic animal, the melting point varying from 95 to 110 F. Very little lard, however, is used for warp sizing, since it has a stronger odor than tallow and the cost is higher than its value as a sizing material justifies. It is known in the trade as "grease."

Tallow Oil. This oil is obtained as a by-product in the manufacture of stearin by pressing tallow. It has the same characteristics as tallow, but is an oil, composed mainly of olein.

Neatsfoot Oil. This oil is ob-

TALLOW AND GREASE SPECIFICATIONS

	Titre minimum	Free Fatty Acids maximum	M.I.U. (Impurities maximum %)	Maximum color (F.A.C.)
TALLOWS				
Edible	41.5	1	1	5
Fancy	41.5	4	1	7
Prime, renders prime, prime packers, or extra	40.5	6	1	13 or 11B
Special	40.5	10	1	19 or 11C
No. 2	40	35	2	No color
GREASES				
Choice white	37	4	1	11, 13,or 11B
Yellow	36	15	2	37
House	37.5	20	2	39
Brown	38	50	2	No color
Fleshing and/or Glue grease No. 1	36	15	1	15

tained from the shin-bones and hoofs of cattle and is similar in characteristics to tallow oil.

Cocoanut Oil is a white fat, of about the consistency of butter, and has the odor of cocoanut; its melting point varies from 70 to 80 F. Cocoanut oil forms a soap that lathers freely even in fairly salty and hard water. It makes a good softener but readily turns rancid, which is objectionable, as it imparts a disagreeable odor to the cloth.

Palm Oil in its natural state is almost blood red. Its consistency varies considerably, as well as its melting point, which is between 60 and 75 F. Palm oil is a useful fat, readily bleached to a pure white. It makes an excellent soap. It generally contains a very considerable amount of free fatty acids. It is produced by special treatment of the ripe fruit of the palm tree and is composed chiefly of palmitin and olein with not more than one per cent of stearin.

Castor Oil is a product of the seed of the common castor plant. It is obtained by expression and extraction; its chief constituent is triglyceride of ricinoleic acid. It contains a small amount of stearin. Castor oil has good softening qualities and marked viscosity. The best grades are white; lower grades appear green to brown. It is used extensively in the manufacture of sulfonated castor oil.

Olive Oil. This oil has considerable value and was widely used as a textile lubricant and finish until its price rose too high. Produced from the barely ripe fruit of the olive tree, the finest oil is obtained from hand picked fruit by careful crushing without breaking the kernel.

A lower quality of oil is then produced by further treatment with hot water, and finally with solvents, especially carbon disulfide.

It has good oiliness. A good grade does not turn rancid readily nor develop objectionable odors. It is a good type of non-drying oil for warp lubrication, but it lacks body and viscosity to make it a perfect size lubricant.

Corn Oil. This oil is pale yellow, has the characteristic odor of corn, and is used extensively in soap

Characteristics of Some Fats

Fat	Source	Melting Range, °C	Specific Gravity	Saponification Nos.	Iodine Number	Composition	Appearance
Beeswax	Honeycomb	62-70	.959-.970	87-107	8-11	Hydrocarbons, high molecular weight esters and alcohols	Brown to white hard wax, slightly tacky, sweet smelling
Candelilla wax	Candelilla plant, Mexico	65-68	.969-.993	46-65	14-36	Hydrocarbons, myricyl alcohol	Hard brown wax, pleasant aromatic odor
Carnauba wax	Palm leaves	84-90	.99 -1.00	79-88	5-13	Hydrocarbons, ceryl and myricyl esters of higher fatty acids	Hard yellow or yellow-green wax
Castor oil	Castor bean	oil	.959-.968	176-186	81-90	Ricinolein, stearin, dihydroxystearin	Viscous yellow oil, characteristic odor
Cocoanut oil	Cocoanut meat	20-28	.912-.926	230-268	8-10	Glycerides of about ten fatty acids	White, semi-solid lard-like fat
Corn oil	Corn kernels	oil	.920-.927	188-193	111-123	Palmitin, olein, arachidin, linolein	Light yellow liquid, slight odor
Cottonseed oil	Cotton seed	oil	.921-.930	191-196	101-116	About like corn	Light yellow liquid, slight odor
Japan wax	Rhus berries	47-51	.970-.980	217-237	4-15	Palmitin and palmitic acid	Creamy yellow, soft wax
Lard	Hog fat	36-40	.914-.916	190-196	60-88	Stearin, olein, palmitin	Soft white grease
Linseed oil	Flax seed	oil	.931-.937	170-195	168-205	Linolein, linolin, olein, stearin, palmitin	Yellow to brown oil, thickens on exposure to air
Neatsfoot oil	Cattle hooves	oil	.915-.916	194-199	66-76	Olein, palmitin stearin	Pale yellow oil
Olive oil	Olives	oil	.910-.920	185-203	77-94	Olein, palmitin, linolin, arachidin	Yellow or greenish oil, characteristic odor
Paraffin wax	Mineral oils	42-60	.880-.915	—	—	Hydrocarbons	Colorless, odorless wax
Spermaceti	Whale	41-46	.905-.960	120-135	4	Cetyl palmitate	White, fairly hard waxy solid
Tallow	Cattle, sheep	28-45	.916	197	40-60	Olein, stearin, palmitin	Yellowish or brownish granular grease

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making, also as a substitute for castor oil to prepare soluble oil.

Cottonseed Oil is a product of the seed of the cotton plant. Its melting point is between 38 and 40 F. It is used extensively for soap making. Being a semi-drying oil, it is not good material as a lubricant.

Linseed Oil. This oil has been used in sizing, principally in rayon skein sizing. Its principal disadvantage is that it is a drying oil, and if allowed time to set, is difficult to remove.

Peanut Oil. This is a light yellow oil obtained by pressing peanuts. It is fairly stable and is used a good deal for preparation of margarines and salad oil.

All the foregoing oils are known as fixed oils. There are many others less important, obtained by extraction of various plants and trees. One of the characteristics of fixed oils is that they are mainly glycerides.

A glyceride is a definite chemical compound of glycerin and a fatty acid. A glyceride may be broken down in different ways; for instance, by heating with Twitchell acids, setting free the glycerin and fatty acids. Glycerin is also set free when the fat is saponified or formed into a soap. All fixed oils are saponifiable.

When two substances enter into chemical combination, one with the other, very often the resulting product has no characteristics in common with either of the original substances. Tallow, which is a mixture of the glycerides of stearic acid and oleic acid, is entirely different from the glycerin which is liberated when the saponification of tallow takes place.

Glycerin is a liquid miscible in all proportions with water and has the property of attracting high percentages of moisture, while tallow is a fat, which does not mix with water and does not have the property of attracting moisture. It is impossible to get glycerin from tallow without chemical decomposition. Nor has the glycerin in combination in tallow any hygroscopic quality; i. e., it will not attract moisture.

The combination of sodium and chlorine gives a similar illustration. Sodium is an extremely caustic, easily oxidizable metal. Chlorine is a yellow gas, strongly odorous and poisonous. The combination of the two makes common kitchen salt, which is not caustic. is white, has no odor, and is used as a food product.

Mineral Oils are produced from petroleum, shale, and lignite. They are divided into saturated, unsaturated, and closed chain hydrocarbons. Those used for lubrication have a flash point in excess of 350 F. There are a great number of mineral oils. They mix with all fatty oils except castor oil.

Some of these mineral oils are valuable in sizing preparations, due to the wide diversity of viscosity obtainable and because they are inert to chemical action, and therefore, compatible with most chemical substances used in sizing.

Unfortunately, mineral oil used in sizing has been blamed by unthinking finishers for some of their troubles. Mineral oil that has been in a bearing and has become impregnated with fine particles of metal from this bearing, will, not by its own nature, but by the presence of this metal, interfere with the bleaching and dyeing processes.

Also, due to its softening and penetrating properties, when mineral oil is dropped on cloth and the cloth is dyed without washing out the oil, sometimes a greater absorption of dye at these spots will result in dark stains. However, when properly dispersed and combined with a size mix, mineral oils should not be blamed for any trouble but should be praised for their helpful qualities.

The very fact that nearly pure mineral oils have been used for years for spraying raw cotton without causing difficulties in finishing should be evidence enough that these oils do not cause the troubles that are often blamed on them. The percentage of total fat (generally only part of which may be mineral oil) that is put on warp yarns by sizing is usually about the same as put on in the spraying process, and is less than the amount of unsaponifiable material already present in the cotton fats.

This should be evidence enough to back up the sizer who might be blamed by some unthinking finisher for his troubles. In addition, most size formulas containing mineral oils include emulsifying agents or saponifiable fats or both. The saponifiable fats form soaps on kiering. Either these soaps or the emulsifying agents used occlude or dissolve the mineral oil present, as they will occlude dirt, and the mixture is easily removed in the subsequent washing process.

In addition to the fixed oils and mineral oils, there are other special types of oils that may be used in the size mix. Of these, one of the most common is pine oil. It is a stable, light yellow oil with a pleasant odor, having good solvent and penetrating properties.

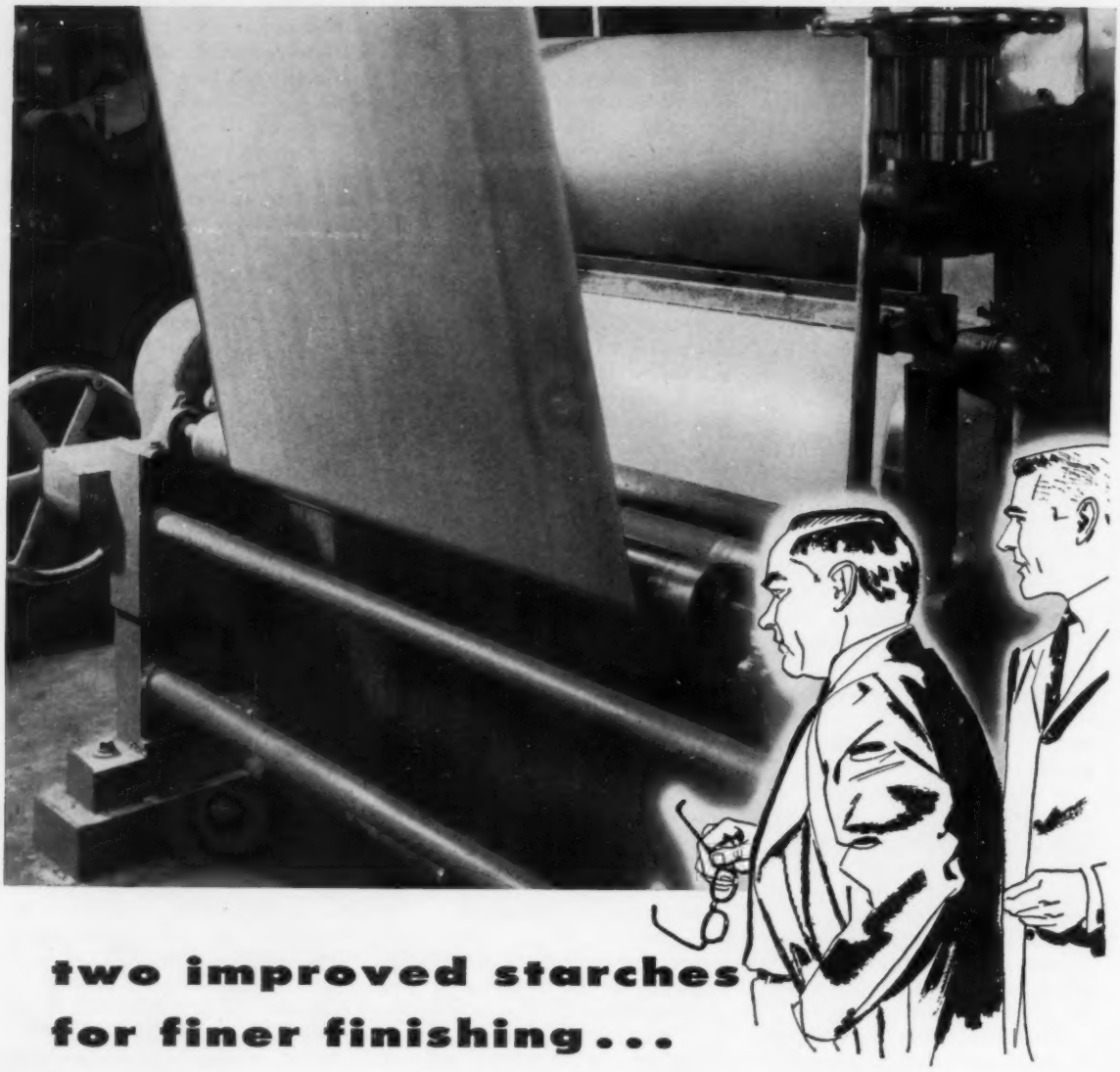
Its most valuable action in textile treatment is softening the hard waxes contained in raw cotton and facilitating their removal in later processes. As a softener or lubricant, it has comparatively little value.

Pine oil is occasionally encountered as an ingredient in penetrants for sizing of filament rayon, but even here it is of questionable value. Probably its greatest attraction is the covering of the odor of the gelatin with the more pleasant pine oil odor.

Soaps. These materials, which are compounds of fatty acids with alkalies or organic bases, are used often as emulsifying agents. They have some value as softeners, but have a very strong tendency to weaken starch films. They have practically no value as lubricants.

One of their worst disadvantages is the formation of insoluble lime soaps with hard waters, which may cause finishing troubles. Another difficulty often encountered with soaps is their marked tendency to foam.

Of course, this is true principally in soft water, as the lime soaps formed in hard waters act as antifoaming agents. Furthermore, certain "superfatted soaps" do not have an appreciable foaming tendency. These are soaps with excess of fat in proportion to the alkali—actually a mixture of soap



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and fats, in which the excess fats act as anti-foaming ingredients to some extent.

The soaps generally encountered are tallow soaps, though often soaps are made from other fats, or from rosin. They are prepared by treating the fats with alkali. Caustic soda produces hard soaps, and caustic potash produces soft or liquid soaps. Organic soaps using amines such as triethanolamine as a base have very good emulsifying properties, and are not as alkaline as the metal soaps.

Waxes form a group of fats resembling beeswax in their properties. The word wax has no particular meaning, and widely different fats are arbitrarily called waxes. Some are difficult to saponify, others saponify quite readily, some are unsaponifiable.

Beeswax. This wax, produced by the common bee, is used to form the cells of the honeycomb. It is a dark yellow product that can easily be bleached white. It has a pleasant honey-like odor, and a somewhat tacky feel.

Japan Wax. Since the war, this wax has practically disappeared from the market, but it was used before that very widely for its excellent softening and emulsifying properties, which are extremely difficult to duplicate by blends of other fats. It is obtained from the berries of some Eastern plants. The refined fat is light yellow, and melts at 120 to 125 F. It is practically completely saponifiable, and easily removed, due to the presence of certain excellent natural emulsifiers.

Carnauba Wax is a product of the Carnauba palm, which grows in Brazil. It is of a dirty yellow color, hard and brittle, with a melting point of 180-188 F. The principal constituent is the myricyl ester of cerotic acid.

Candelilla Wax occurs as an excretion from a plant growing extensively in northern Mexico and southern United States. Its melting point is 140-175 F. It is brown in color and has the appearance of beeswax, but is much harder. These high-melting-point waxes are used to increase the viscosity of low-melting-point fats.

Spermaceti is obtained from the cavities of the head of the sperm whale; it is almost blue-white, crystalline, and melts at about 115 F. It is composed mainly of cetyl palmitate. It has a very good body.

Paraffin Wax. This is a mineral wax, colorless, with valuable lubricant properties when properly blended. Another similar mineral wax is Ozocerite, which has a very high melting point and is used principally in blends to increase the melting point.

Sulfonated Fats. A very wide range of softeners is produced by treatment of natural fats with sulfonating agents, such as sulfuric or chlor-sulfonic acid. These sulfonated oils, fats, or waxes have excellent softening properties, emulsifying properties, and generally some wetting-out properties. Most will emulsify in water, and some are even water-soluble. Highly sulfonated fats are usually poor lubricants, and if used in excess, have a strong tendency to increase shedding.

Sulfonated products are made from pure fats, from synthetic fats, and from blends of fats. Their properties are as variable as the possibilities for manufacture. So-called "sulfonated tallow" may vary greatly, depending on the tallow used and the extent of sulfonation. Generally these fats are only partially sulfonated. They are used more extensively in finishing than in sizing, where soft hand is desired. Their main usage in sizing is in light formulas, or non-starch-based sizes where they are more readily emulsified than the usual fats.

One of the greatest advantages of sulfonated products is their storage stability. They do not have the tendency to turn rancid that some raw fats, such as cocoanut oil and low grade tallow, have.

Cation-Active Softeners. These are materials in which the fatty or active part of the molecule is contained in the positive ion, rather than in negative ion, as with soaps. For this reason, they are sometimes called invert soaps. They are generally organic derivatives of ammonium chloride or bromide.

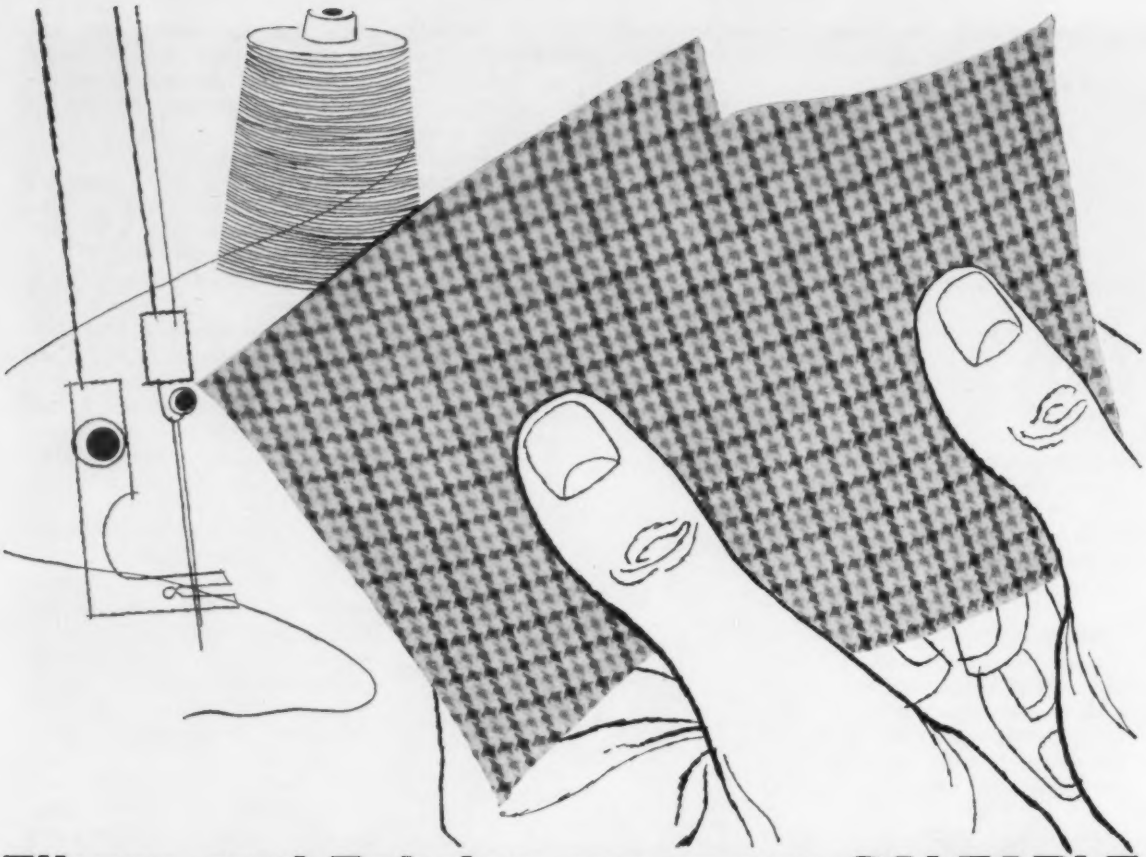
They have about the same softening qualities as soaps, but have several advantages over soaps. One of these is their stability to hard water. They are compatible with many salts with which soap is not compatible.

Their general value as lubricants is not yet well known, but they are presumably not as good as the natural oils. Their cost has so far kept them out of most size formulas, but they are used a great deal in finishing due to their ability to exhaust from a bath, and to their laundry stability, two properties which are of very little interest to the slasher man. Their substantivity for cellulosic fibers makes them difficult or impossible to remove during ordinary desizing procedures. Furthermore, they are not compatible with anionic oils, detergents, softeners, or penetrants. They would therefore have to be used alone, and might even cause difficulties due to their presence on the goods if the goods were subsequently treated in solutions containing anionic materials.

Synthetic Fats. The possibilities in the field of synthetic fats are enormous. Many are already being used in textile processing, some in sizing. An example of a common synthetic fat is margarine, which is produced from oils through hydrogenation. This same process is applied to fish oils, tallow, and other glycerides, yielding a product with higher viscosities, and solid products with comparatively high melting points, at the same time removing the odors that prevent the use of the fish oils themselves for textile processing.

Another type of synthetic oil is the ester oil. These are compounds of alcohols, such as ethyl, propyl, or butyl, with fatty acids. Some of these have excellent lubricating properties. Also included in the ester types are the partial glycerides, such as glyceryl monostearate, which are good softeners and good emulsifying agents, though not such good lubricants.

High-melting "waxes" have been



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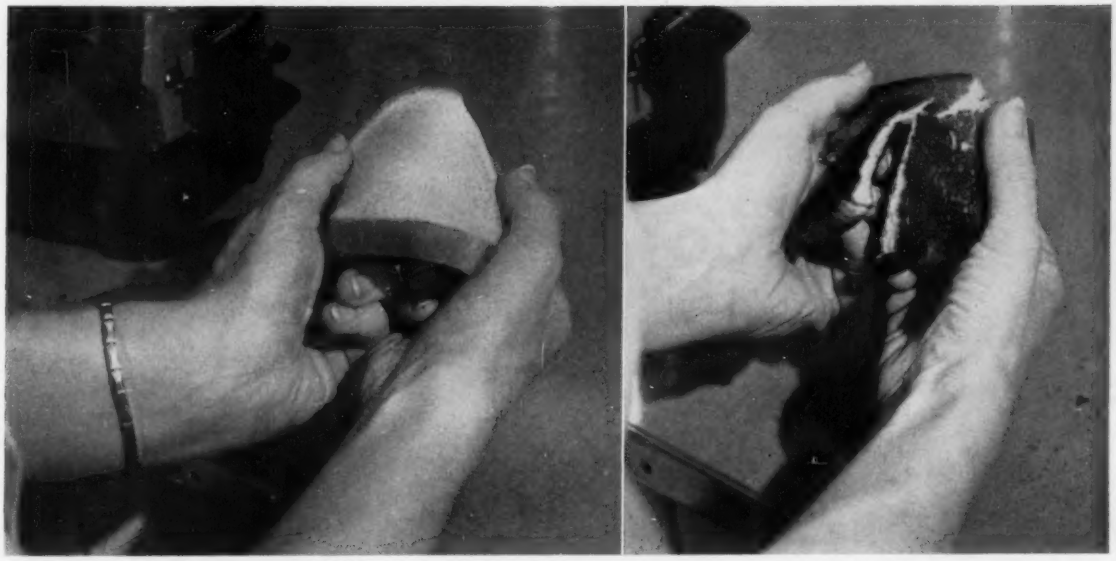


Properly baked starch products, such as size and bread, are flexible (note how slice of bread in left photo bends without breaking). Toast (right photo) and an over-dried size film are brittle.

developed which are water-soluble. Among these are the polymers of ethylene oxide. Amide and nitrile derivatives have been produced from fatty acids. Most of these types of synthetic fats have not as yet found use in sizing, partially because of price, and in many cases because laboratory tests have shown them to be inferior for sizing purposes to the materials at present in use.

Nature and science offer a great variety of fats. Those mentioned are only a few of those available for warp sizing. No one of them alone is ideal either as a lubricant or softener. A blend of at least two, preferably several, is essential to obtain the best results. The price, the quality, and the supply available control the selection of the best mixture most economically compounded.

Deliquescents. Retaining Moisture in Warp. The fact that a certain amount of moisture is essential to good weaving is well known, and does not require any underlining at this point. It may, however, be expedient to go into the reasons for this effect.

From the sizer's standpoint, it is desirable not only to have the necessary moisture in the warp at the time it is woven, but also to see that during slashing the moisture content does not become too low.

A starch-based size film which has been dried excessively by baking on the cylinders will never again regain the pliability and flexibility which it would have had, had it been properly dried. To understand this, we have only to examine a loaf of bread—which is, after all, principally starch containing a small amount of fats and other chemicals.

The outside of the loaf, the crust, has been excessively baked by exposure to more heat than the inside. This crust does not have, and cannot be made to have by addition of moisture, the flexibility and elasticity of the inner part of the bread.

In the same way, we must be sure that we do not bake the size film on the yarn, for tensile strength without elasticity and flexibility will not give the good weaving qualities a warp should have. Against the bending due to harness movement, whip roll, etc., the warp must possess elasticity and pliability, which are quite as important as tensile strength. Bending is also severe where the warp interlaces the filling and is beat up by the reed.

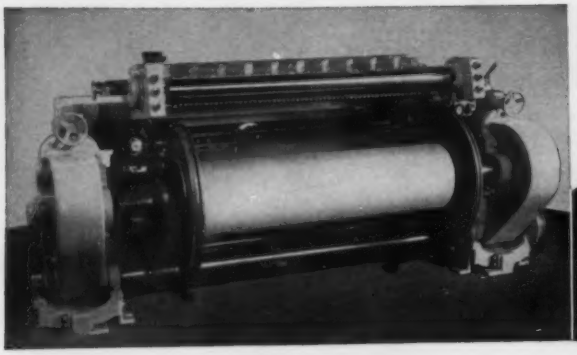
A warp protected by a deliquescent will not bake as readily as one not so protected. Deliquescents will not only hold more moisture in the yarn at room temperature, but will keep moisture in also at higher temperatures.

The tensile strength of cotton yarns is also increased by increase in the moisture content of the cotton, as mentioned in the chapter on the composition and properties of cotton. Contrarily, the tensile strength of rayon decreases with an increase in the relative humidity. It is for this reason that, for comparison, yarn strength tests must always be made at a standard humidity.

Increase in moisture will decrease the tendency toward accumulation of static electricity. This is a difficulty generally encountered more with rayon and synthetics than with cotton.

The proper amount of moisture will increase the flexibility of the warp yarns. Even those that have been baked will be given better flexibility by increasing the moisture content, but the moisture will not help the elasticity of a baked film.

Elongation (which is sometimes confused with elasticity) is also improved by increase in moisture content. Elongation is the amount of stretch produced in a yarn be-



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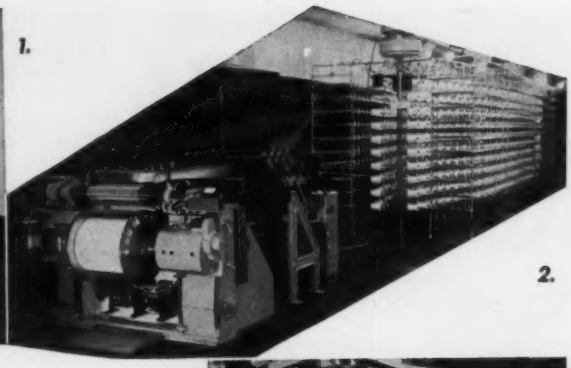

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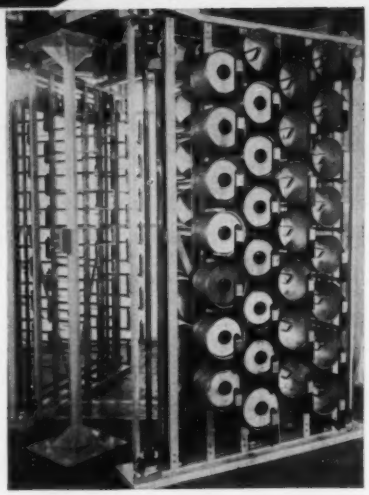

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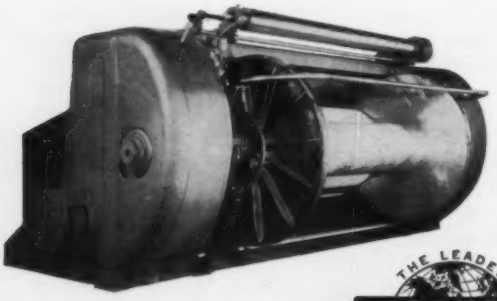

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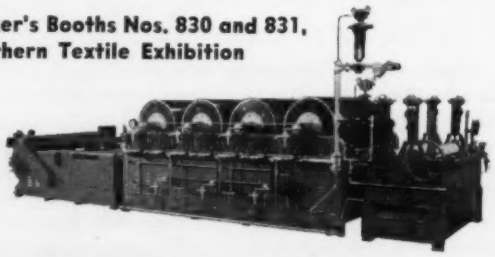
Visit Cocker's Booths Nos. 830 and 831, Southern Textile Exhibition



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fore it breaks, generally expressed in percentage of the length. Elasticity is that property of the yarn which enables it to return to its original length, or nearly so, after having been stretched.

Deliquescent Materials. The number of deliquescent materials that may be used in sizing is limited by the fact that many of the common water-absorbing agents are strong acids (such as sulfuric acid) or strong alkalies. Practically all those commonly in use are among the classes of metal chlorides and of polyhydric alcohols.

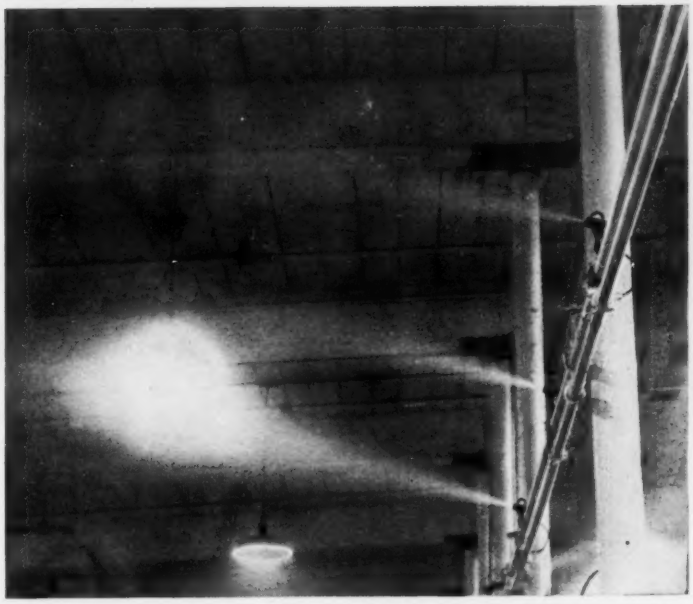
All chlorides are not effective, nor are all of the alcohols. For instance, sodium chloride, the commonest chloride, is practically not at all hygroscopic in the pure state.

Chlorides have been subjected to exaggerated and undeserved criticism of the wildest nature; particularly has magnesium chloride been represented as the arch criminal. It is hardly necessary to defend magnesium chloride, because, although it has been and still is being used abroad, it is no longer used extensively in this country.

There are, among other chlorides, some with more stability that have all the qualities and none of the alleged dangers. Magnesium chloride is the least stable of the commercial chlorides.

Chlorides have been accused by thoughtless writers, and especially by dodgers of responsibility, with the crime of dissociating at high temperature and of tendering the warp. Any temperature that will dissociate the deliquescent chlorides used and mixed with starch, with which they form a sort of combination, will long before have ruined the warp anyway. The little additional damage the chloride could do, does not need to be considered.

The reports by the English investigators, Hubner and Malwin, quoted in the discussion of cotton, show the negligible effect of these salts on cotton at temperatures ordinarily encountered. In addition, this is measured in concentrations of 1% salt. The amount of size compound put on the warp is of the order of 1% with the usual



The proper relative humidity is necessary to maintain the yarns at the optimum moisture content for efficient weaving.

formulas in most mills. Considering that this may have at the most 10% of chlorides, this means that only 0.1% of chlorides are put on the yarn, an amount far below those shown to be safe.

Extensive experiments were carried on by Harold Bunger and the author, with collaboration of Professor C. A. Jones at the Georgia Institute of Technology. The conclusion arrived at was that chlorides in such concentrations as are being used by capable chemists in warp sizing cause a definite improvement in tensile strength. There is nothing fundamentally bad in nature, but what misuse makes it so. Chlorides, like anything else used to excess, are harmful. Even water, one of nature's greatest gifts to man, must be used in moderation.

These chlorides have long been used in England and continental Europe for weighting cloth in amounts from ten to fifty times those used in slashing, without experiencing difficulties. Cotton is subjected to much more strenuous chemical treatment in bleaching and dyeing than the small amount of chlorides used in sizing could possibly subject it to.

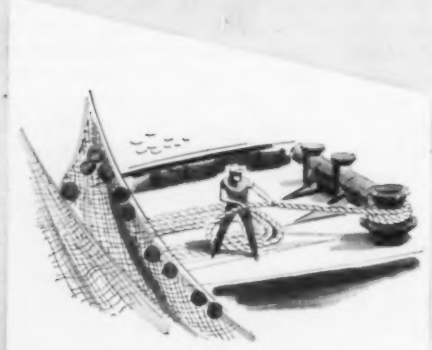
Walter A. Nivling, on pages 67 and 68 of his book on starches, after stating that deliquescents add strength and suppleness to every size formula and are essential ingredients, goes on to say: "The statement that calcium and zinc chlorides are harmful has been passed without justification. This is unfortunate because it may discourage the use of very useful substances."

The critics of chlorides should find their answer in the fact that practically all the important manufacturers of sizing compounds have used these materials for many decades to size billions of yards of high grade goods, without a complaint which was directly traceable to them. Certainly if they had these defects, they would have been long ago dropped from usage.

Magnesium Chloride ($MgCl_2$). This comes as needle-shaped crystals containing 51% of water of crystallization. Magnesium chloride exists in many springs and in sea water. It occurs in large quantities in the mineral called carnallite. It has no antiseptic value; it is simply a deliquescent. It has been used in considerable quantities, especially as a deliquescent in conjunction with weighting

Conveyor Belts

Webbing



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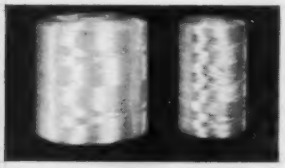
For heavy-duty applications, this new kind of nylon combines toughness, high impact strength, abrasion resistance, long flex life, and — for conveyor belts — excellent troughing qualities.

Where color is desired in nylon, Caprolan also offers a previously unavailable affinity for virtually any class of dyestuff, and can provide quality color rendition of dyes in shorter dye cycles.

Caprolan nylon heavy yarns eliminate the need to ply multiple ends of finer deniers to achieve a higher total effect. They can be engineered as high as 50,000 total denier, according to your specifications, and are put up on a new 30-lb. package as well as on 10-lb. packages.

You will want to look into such Caprolan economies as longer runs between creelings . . . ready dyeability . . . elimination of costly fine denier inventories . . . and the unusual and lasting whiteness of Caprolan that develops no appreciable yellowing in storage.

Caprolan heavy yarns already have been established in many leading mills. For more information or technical assistance, call or write us today.



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materials such as china clay.

Calcium Chloride ($CaCl_2$). Calcium chloride is found in the water of springs and rivers, and consequently in sea water. It is also very widespread in nature and is a natural ingredient of vegetable matter, including cotton. Its main source is as a by-product of the manufacture of sodium carbonate by the Solvay process. Commercial calcium chloride in air saturated with moisture will absorb more than its own weight of water, and will retard very considerably the evaporation of water of its solutions.

Zinc Chloride ($ZnCl_2$). Zinc chloride is obtained by chemical treatment of zinc scraps. The crude solution is treated with sodium carbonate and mixed with bleaching powder to precipitate iron and manganese. The clear solution is siphoned off and boiled down in enameled iron pots. The evaporation is continued until a temperature of nearly 470 F is reached. Before the fused mass solidifies, it is run into steel drums which are immediately sealed.

It is interesting to observe that a temperature of about 450 to 500 F is used to obtain fusion without decomposition, and yet some writers claim that hydrochloric acid is produced during singeing in sufficient quantities to injure the cloth. If the whole cloth were heated above 500 F in the singeing process, the cloth would be ruined anyway.

Zinc chloride is a white or grayish-white mass or powder with a specific gravity of 2.9. It is highly hygroscopic and deliquescent, an excellent permanent antiseptic, germicide, disinfectant, and deodorant.

Glycerin, Glycerol ($C_3H_5(OH)_3$). This is a colorless, deliquescent liquid boiling at 290 C; it should burn completely upon incineration and leave no ashes. Fatty oils and fats are glycerides, the result of combination of fatty acids and glycerin. Through saponification involving the addition of water, the glycerides yield glycerin, a trivalent alcohol. It is a by-product produced at soap factories.

At ordinary temperature, glycerin does not volatilize. In a solution of glycerin and water, at the boiling point of water, a good deal is carried off by water vapors. The chief objections to glycerin are the high cost compared to its comparatively low efficiency and the fact that by increasing the surface tension of a liquid, it may cause a colloidal mixture to foam excessively.

Several substitutes for glycerine which are chemically similar organic compounds with approximately the same properties may be obtained. The most common of these is diethylene glycol, which is used also as an anti-freeze agent. Sorbitol, an alcohol derived from sugar, is occasionally used. Glucose has been used to substitute for glycerin but does not have its strong hygroscopic properties; in addition, it is a good medium for mildew development.

The sodium salts of certain mild organic acids are also excellent deliquescent agents and have been occasionally used in sizing.

(Continued next issue)

What oilless top rolls did for 3 mills

● ONE SOUTH Carolina mill recently installed Clean-Align oilless top roll system on 4″ gauge warp spinning frames running 10″ tubes. A spokesman for this mill stated that records showed roll picking was cut 66% as a result of the changeover, in addition to savings made possible by conservation of oil.

Another prominent South Carolina mill conducted tests after installing Clean-Align rolls on spinning and found that ends down per thousand spindle hours averaged 14. The rolls formerly used required frequent lubrication and averaged 20-25 ends down per thousand spindle hours of operation.

A third mill in South Carolina found that labor was saved to a worthwhile extent in terms of oiling time as well as roll picking. Lubricant costs were also trimmed at this plant. The mill cut roll picking from ½ to ⅓ former requirements on medium counts of yarn and short to medium staple. All of these advantages were attributed directly to the installation of the oilless top rolls.

Installation of oilless top rolls in a South Carolina mill.

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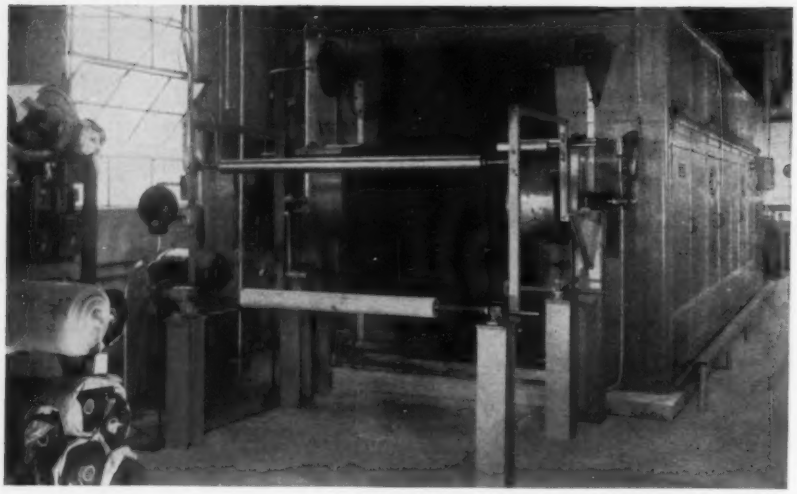

The installation of a new Proctor Roller Curer together with rearrangement of existing facilities, has enabled the Oxford Textile Finishing Company, Oxford, N.J., to increase production from 50,000 to 105,000 yards per day. At Oxford, the new curer achieves 85 to 95% cures.

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To find out about the complete "Oxford Story" as well as the advantages of a Proctor Roller Curer in your mill, write for latest information bulletin #412.

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How to spin mohair

Here's a lay-out for spinning 30s yarn from 4s mohair

by Watson J. Wood
Knitters Ltd.
Lindsay, Ontario
Exclusive

THE AIM in spinning mohair yarn is to have every fiber parallel to its fellows—that is, a quality thread is smooth, round, free from "curls," and as even as possible.

The finest yarns are made on the flyer method, using the Bradford worsted system. The thread being wrapped around the flyer leg during spinning keeps the fibers in line and prevents them from being battered on the separators. The yarn being thus held, it is not whirled loosely around the bobbin, as is the case, for example, in both cap and ring spinning.

The only objection to flyer spinning is usually the cost; especially is this so in the processing of fine counts. Spindle speed is a great factor in making quality yarns, although given a good roving, excellent yarns may be made at 5,000 to 7,000 rpm on the ring frame; providing of course that the ring is the proper size.

Long, large packages can be utilized with small rings where the modern double lifter motions are employed. Single yarns should never be made on cap machines, although I have processed perhaps millions of pounds on cap frames for two-ply yarns used in the upholstering trade. Nevertheless, a cap yarn for filling would make a cloth almost valueless as an outer fabric.

For hidden linings, such as those used in good quality ties, and ladies' wear suitings of light weight but high quality which carry an interlining of light mohair cloth in the coat lapels and collar, these yarns pass.

MOHAIR is a specialty fiber obtained from the Angora goat, which is raised commercially in the United States, principally in Texas, and in Turkey and the Union of South Africa.

Each quality has its own type of handle and luster. The principal characteristics of mohair are:

(1) Heavy, slippery fibers; scales close to shaft.

(2) Strong, springy, broad crimps.

(3) Lustrous (except some light grays, which are kempy).

(4) Handle—rough to very soft, coarse to fine.

Some qualities are carded only; others are combed. The longest fibered qualities are often combed on the Lister nip comb. One thing we must always remember: The mohair fiber is very susceptible to kinks when wet.

In passing, perhaps we should also state that certain types of mohair are sometimes blended with B. A. and N. Z. wools. In yarns and cloths this is often difficult to detect.

A MEDIUM QUALITY MOHAIR

(Continued on page 153)

Organization for 30s Yarn, 4s Mohair

One double set; Bradford worsted drawing — **Production 1,000 lb per 8 hours**

Top sliver, 400 drams — **8½-dram roving**

Machine	Ends Up	Draft	Ratch In.	Drams	Front Roll rpm	Front Roll In.	Spindle rpm	Bobbin Size In.	No. of Spindles	Shaft Speed rpm
1st can gill[1]	7	6	11	466	80	2½	—	cans	—	200
2nd can gill[2]	6	6	10½	466	80	2½	—	cans	—	200
2-spdl gills[3]	4	6¼	10	300	110	2½	110	14 x 9	4	245
Draw box	6	6½	14	277	52	4	130	14 x 9	8	120
Weigh box	4	6½	13	170	90	4	265	14 x 7	10	185
Finishers	4	6½	12½	104	70	4	275	12 x 6	16	130
Reducers	2	7	11½	30	62	4	485	9 x 5	72	140
Rovers	2	7	10½	8½	52	4	700	8 x 4	270	200
Spinning[4]	—	14	11	—	—	4	5,000-7,000	—	—	—

1 1st can gill, 21 fallers per set, 10 pins per in., faller speed 200 per min.
2 2nd can gill, fallers same as 1st.
3 12 pins per in.
4 3 carriers, wide settings, bottom carrier 2 in.; when curls are present, widen bottom carrier.

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ANY OF THESE CATALOGS WILL BE SENT ON REQUEST

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74b • "V3 Switches"	**90a** • "Mercury Switches"
75a • "Subminiature Switches"	**101b** • "Switches for Industry"

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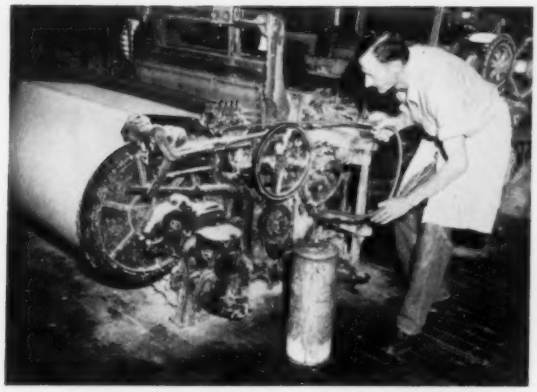
Stops needle breakage:
Switch stops knitting machine when slack develops in wire. Mechanism starts automatically when slack is relieved.

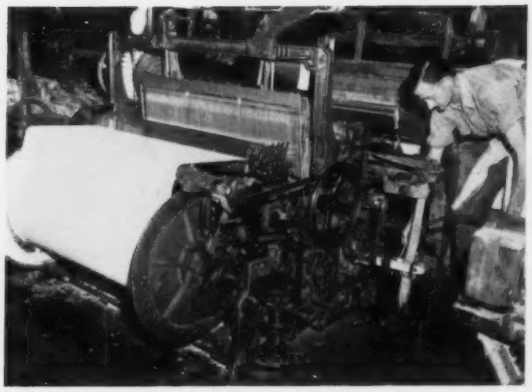
Controls size of roll:
Roller-plunger actuated switch is operated by the roll. When the fabric being made or processed reaches the desired roll size, the switch is operated and stops the machine.

Prevents yarn breakage:
Breakage of yarn, due to high or low tension, is prevented by use of two maintained contact switches. A bar between the two switches actuates one switch or the other to shut off the machine if tension becomes too high or too low.

Protects operator's hand:
In carpet wringing operation, switch is operated by cam to shut off squeeze rolls in case a baffleboard is pushed forward enough to endanger the operator's hand.



Solvent is sprayed on loom and allowed to stand for about 15 minutes before beginning the blowing off procedure. Applicator was made in mill shop.



Clean loom emerges a few minutes later. Solvent loosens oily lint and dirt, thereby permitting operative to do a better job of blowing off.

Toxaway's new loom cleaning program

Solvent loosens grease, dirt, and lint before blowing off

Staff prepared Exclusive

ABNEY MILLS, Toxaway Division, Anderson, S. C., formerly blew off looms with a blow pipe in the usual way; however, regular blow offs failed to clean the looms satisfactorily.

About a year ago this mill started spraying the looms with a chemical compound before blowing off. This chemical is a solvent-type cleaner that loosens accumulated grease, oil, dirt, and lint, and makes the job of blowing off easier, quicker, and more thorough.

The regular schedule for blowing off looms was once in 24 hours, and this time interval is still adhered to. Now, the chemical compound is sprayed on with compressed air about 15 minutes before the loom is blown off. No wiping or brushing is done; formerly both wiping and brushing were part of the cleaning routine.

Now, there is less lint flying about and into the work at blow-off. The chemical cleaner gives better results than other liquid cleaners tried in this mill, according to R. L. Smith, superintendent.

Although quality has improved to some degree, the exact amount of benefit is difficult to pinpoint, Mr. Smith said. No help has been added to do the job, and slubs have definitely been reduced by eliminating excessive heavy fly resulting from blowing off.

Loom cleaning costs have increased 1.25¢ per loom per month to pay for the chemical now in use. The mill is currently experimenting with a new schedule of cleaning to extend the blowing off interval from once in 24 hours to once in 48 hours. This change is designed to cut loom cleaning costs; however, the new schedule has not been proved in practice yet.

The chemical compound used is called "Lintgo," and is supplied by Lester Laboratories, Atlanta, Ga.

Spin mohair *(continued from page 151)*

should serve the purpose of an all-around example for this article; let us choose a 4s mohair top, with fibers varying in length from 14″ to 5″.

Experience has proved that the finest count that can economically be spun from any stock must have a minimum of 24 fibers in its cross section, and this applies to all classes and types of spinning equipment. A yarn with less than 24 fibers in its cross section will prove expensive: The spin will be poor, spindle speeds will be lowered, and an operator's load will be uneconomically low. In addition, the evenness of the yarn will be poor.

In the example chosen, the average worsted count of the fibers is 760s. Then, the number of fibers in a 30s yarn, for example, will be:

$$\frac{\text{Fineness of fibers in top}}{\text{Count to be spun}} = \frac{760}{30} = 25$$

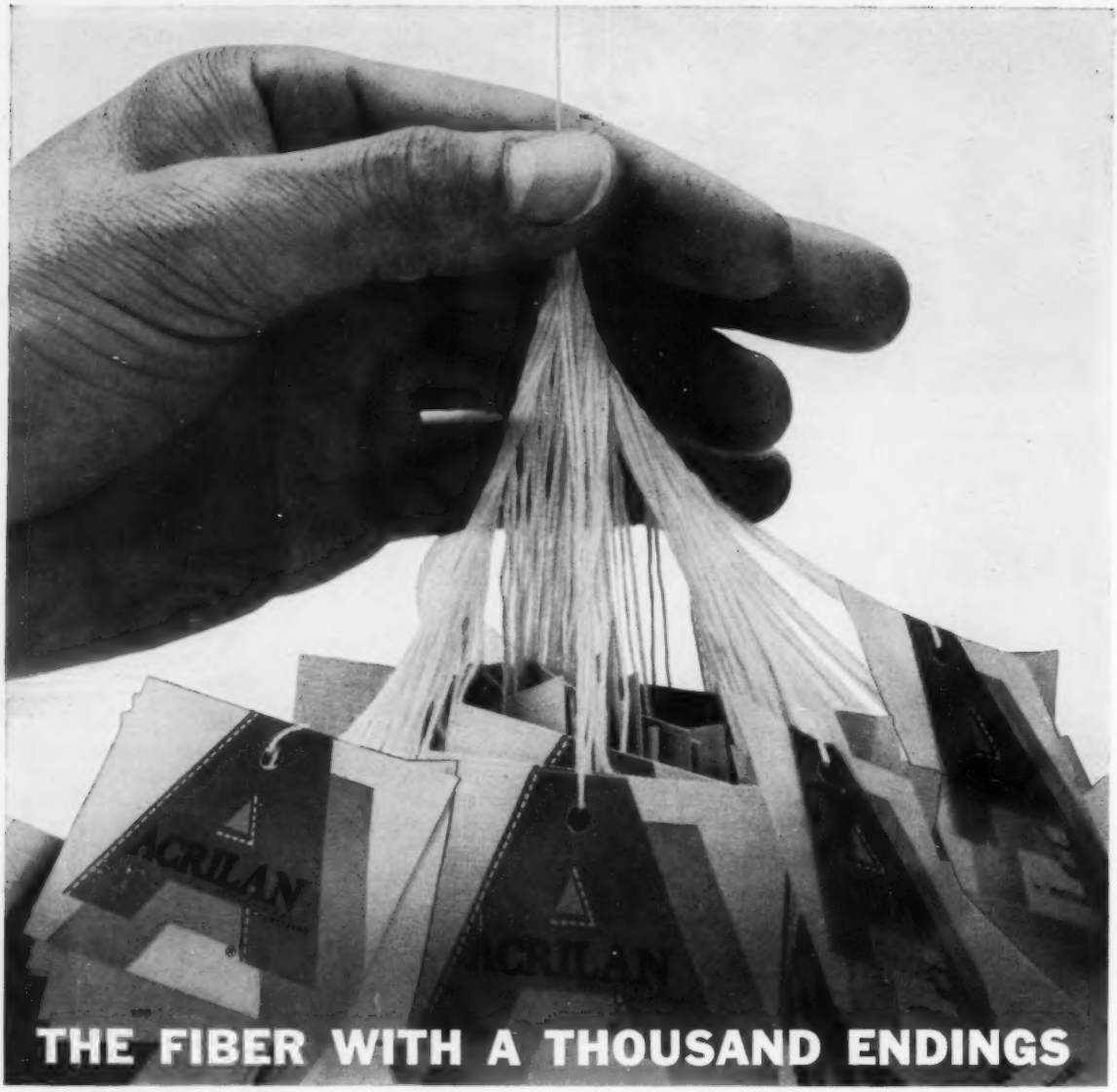
That is, a 30s yarn will contain an average of 25 fibers in its cross section.

There are three primary rules to remember in drawing and spinning mohair:

(1) Start with low drafts and gradually increase at least to the length in inches of the longest fibers.

(2) Wide open settings are a must.

(3) Twists must be kept to a minimum.



ACRILAN

There's no end to the end uses of Acrilan acrylic fiber. From high-fashion dresses to long-wear work clothes, from blankets to baby's sleepwear, from suits to sweaters—Acrilan adds new luxury and practicality. It makes up into fabrics with remarkable, luxurious hand and longer wearing qualities ...lighter-weight fabrics that look rich, have a magnificent affinity for color, and retain their shape and press. Fabrics that can be machine-washable, in many cases wash and wear. In a widest possible variety of fabrics for a tremendous variety of end uses—Acrilan gives you a run for your money. And then some!

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ACRYLIC FIBER BY CHEMSTRAND

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So long as the laws of the nation permit the formation of absolute labor monopolies . . . and the ordinary laws of competition are completely repealed, we are going to continue to have

Guaranteed annual inflation

by Ringgold Arden
Exclusive

THE AMERICAN people have just lost another round in the ceaseless war which the big labor monopolies are waging to raise the standard of living of their membership by raising the cost of living to the general public.

The steelworkers' union, which exercises absolute monopoly control over the steel industry, has assured an increase in the price of steel. This union has also insured that the leaders of every other union will be put on the spot with their members to get something for them—always, of course, at the expense of the general public. This certainly means higher prices for almost everything almost immediately.

THE TEXTILE industry is hit unusually hard, and in many places, by this endless inflation forced upon the national economy by the policies of the big labor monopolies and the rivalry among labor leaders to see who can take the biggest bite out of the public purse.

The textile industry is a highly competitive industry. Many of the big industries completely controlled by labor monopolies are not competitive in the same sense that the textile industry is.

Steel mills do not enter into price wars with each other, nor do automobile manufacturers and electrical manufacturers. In businesses like those, the manufacturers set their prices on a reasonable competitive basis, while in the textile industry, the price is normally set by the buyer rather than the manufacturer.

The steel industry is completely dominated by about three or four companies, and one labor monopoly. The automobile industry is almost completely covered by three companies and one labor monopoly. Three companies make most of the electrical equipment in the United States, and two companies make most of the locomotives and railroad cars.

The textile industry is split up over some 1500 prime producers of yarn, cloth, and knit fabrics; and competition in the real old-fashioned sense prevails throughout the industry. Many textile mills are unionized, while many are not.

The unions have destroyed so many textile plants that they attempted to run according to their ideas that the unionized plants today are not in the same strait jacket that they would wear if there was a union monopoly of textile labor as these monopolies exist in the big consolidated industries.

A unionized textile plant, with all of its featherbedding and unreasonable exactions, either has to go out of business or make such changes as will keep it competitive, and great numbers of textile plants which have unions are only nominally unionized as compared with the big industries which are completely racket-ridden by absolute monopolies.

THESE ANNUAL WAVES of inflation which the big labor monopolies force on the economy send ripples into every portion of it; and although 75 per cent of the working people in the United States do not belong to unions, and probably less than half of those that do are in any position to exercise monopoly control of their industries, the big waves of inflation force wage increases, and therefore price increases, throughout the whole economy.

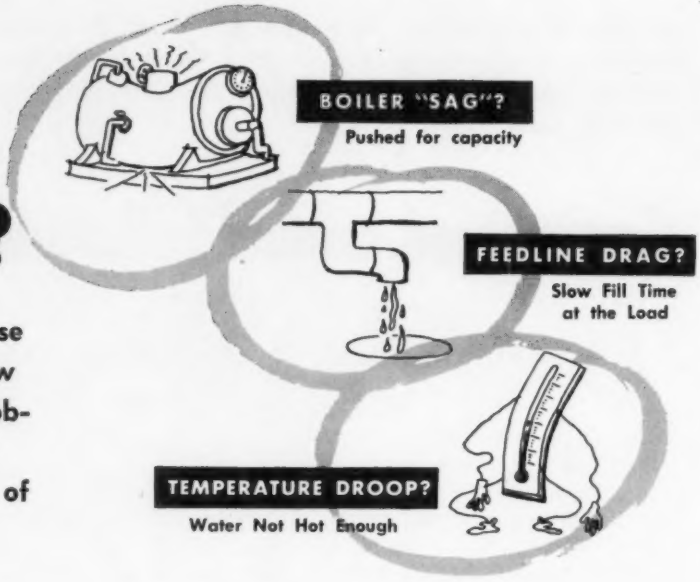
The textile industry will therefore not only face the necessity for paying higher wages to meet an increased cost of living, but can confidently expect the price of textile machinery and supplies to increase, and all of these added costs are coming at a time when the textile industry is facing a very grave situation brought about by lowering tariffs to encourage foreign competition.

IT IS QUITE TRUE that just now the volume of foreign imports is small, and politicians who know nothing about manufacturing or merchandising point to two or three per cent of foreign imports as a trifling and inconsequential matter. Any textile manufacturer knows, however, that if a merchant's counter contains his product, and right alongside of it is what appears to be exactly the same thing for 25 to 50 per cent less, the customer is going to clamor for the lower-priced goods; and the manufacturers of the American goods are going to cut their own and each other's throats trying to get prices down as near as possible to the cheap foreign competition. This may not make any sense, but it is the way the textile industry works.

If all textiles were produced by two or three big corporations, as automobiles, steel, and many other things are produced, this cheap foreign competition might not make any difference, but in a truly competitive industry like ours, it makes a tremendous difference; and the bigger the spread between the cost of the foreign goods and the domestic product, the more acute the difficulties of the domestic manufacturers will

HOT WATER PROBLEMS?

If you have the first of these problems you already know it. The other two, (easily job-checked by recorders) may be taking money right out of profits, every day!*



Introducing the SCHAUB *ISO-THERM* SYSTEM

The FIRST Storage Water Heating System that:

- **Stretches boiler capacity—completely eliminates overloading and peak steam demands.**
- **Insures constant "full" water temperature—regardless of load.**
- **Feeds hot water to load quickly—cuts fill time.**

The Schaub Iso-Therm is the *first* storage water heating system that supplies *any* quantity of hot water needed at *any* one time (for fast multiple fill) at a *constant*, predetermined temperature . . . yet never draws steam from the boiler beyond the average economical gph heating rate.

Totally new in concept, the Schaub Iso-Therm System has proved to . . .

Keep boiler pressure UP

Reduce water, soap, detergent and softener needs

Fill machines faster

Keep water temperature and pressure constant at the machines for most efficient operation

Reduce fuel costs by leveling off peak demands on boiler

In addition, if your present boiler is now pushed to capacity, the Schaub Iso-Therm may enable you to defer purchase of a larger boiler that may cost far more than the complete Iso-Therm System.

Get the facts and technical data *now*. Write for Bulletin No. 923. Easy to read, packed with interesting data, it may show you the way to more profitable operation. Send for it today!

*** Want the Proof?**

Temperature and pressure drop-offs or fluctuations in the supply header to your loads indicate the efficiency of your storage water heating system. Your Schaub representative will "lend" you — *without cost or obligation*—continuous temperature and pressure recording instruments. After your own check — *made by you* — you'll definitely and positively be able to decide whether your present system is delivering profits or draining dollars!

Write for full details and new booklet.

FRED H. SCHAUB ENGINEERING CO.

2104 South Marshall Boulevard
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become.

To add to the miseries of the textile industry, our government is now offering the foreign competition cotton at a cheap price, subsidized by the American taxpayer. It would seem that the federal government is trying to make the competition even worse for the American textile manufacturer. Higher prices for labor, machinery, and practically everything else will aggravate the pain of the American textile producer.

THERE IS no doubt that the settled policy of the big labor barons is guaranteed annual inflation. A demagogic advertisement by the United Steelworkers of America in the American papers late in July made it perfectly clear that the steelworkers, along with the other big labor union monopolies, are only interested in contracts which permit them to burgle the public at regular intervals.

No reasonable person could question the fact that these steelworkers are already overpaid. This is perfectly clear from the fact that the average hourly rate for steelworkers was published as $2.46 an hour, and the United States Steel Corporation in its annual report for 1955 stated that the average wage of its employees was $2.70 an hour.

Since the average wage of similar workers of like capabilities in other manufacturing industries is somewhere between $1.60 and $1.80, it is a certainty that the steel industry could hire all of the people it wanted at $1.60 to $1.80 in a free, competitive market.

The public interest would, therefore, be best served by reducing steelworkers' wages instead of increasing them. This would reduce steel prices and increase the demand for steel and enhance the general prosperity. The general prosperity, however, is nothing which enters into the calculations of labor monopolies. They are solely concerned with constantly getting more and more for the people they represent at the cost of less and less for the public.

More and more, labor unionism in the United States is becoming nothing but legalized banditry. To seize and hold property for ransom is accounted banditry in any civilized country, but it is this alleged "right" of the labor unions to seize and hold property for ransom which constitutes their terrible economic stranglehold on American industry.

Seizing property for ransom is not only legal, but both federal and state governments will assist with the seizure; and the federal government will furnish an official to help arrange the ransom, while at the same time the people who have willingly deprived themselves of employment and income are subsidized by the federal government so that they will suffer a minimum of inconvenience while waiting for the ransom to be arranged.

THE GENERAL PUBLIC knows entirely too little about what is being done to it by these big labor monopolies. The typical citizen only knows that his cost of living is constantly going up.

There may be little pauses in its upward sweep as farm prices go down and food gets cheaper, but the government comes to the rescue of the farmer and the forward march of inflation continues.

So long as the laws of the nation permit the formation of absolute labor monopolies, capable of dictating their own wage rates, pension plans, and other things that go into the cost of manufacture, and the ordinary laws of competition are completely repealed, we are going to continue to have guaranteed annual inflation.

There is something wrong in an economy where costs constantly go down and prices constantly go up. There is something wrong with the functioning of a government which makes it a crime for certain people to operate monopolies in restraint of trade, but encourages others to do it. What is a crime when done by one man can not possibly be a meritorious action when done by another.

Modern American textiles displayed

● MORE than 180 fabrics manufactured by 111 firms and craftsmen have been selected for the exhibition "Textiles USA," which was placed on view at the Museum of Modern Art, 11 West 53rd St., New York, N. Y., August 29 and will be shown through November 4,1956.

The exhibition will, according to the announcement, be a tribute to American design in the textile fabric field. All fabrics were produced within the past ten years.

Apparel fabrics, home furnishings textiles, and industrial fabrics were selected on the basis of esthetic qualities. Examples were drawn from the workshops of handweavers as well as from the giant plants of the industry. Brilliantly colored cottons, silks, and fine woolens are included, as well as fabrics demonstrating the versatility of many synthetics.

Although the Museum of Modern Art has exhibited contemporary fabrics in many exhibitions, as well as rare old textiles, this will be the first major show devoted entirely to modern American textiles. It is hoped that the exhibition will travel after this showing.

During the past few months an industry committee, headed by Daniel Fuller, president of Fuller Fabrics, has been actively engaged in obtaining the widest possible support for the show.

"It is difficult to over-emphasize the importance of this kind of public presentation and its far-reaching influence," Mr. Fuller said. "To start with, Textiles USA is national, not local. It is a completely non-commercial, non-profit project. It glorifies the fabrics of America in a way that is far beyond the capacity of individual mills or groups of mills. It focuses the attention of all manufacturers and merchants on the importance of fabrics in American life. Above all, it gives the consuming public, at long last, a picture of the great fabric world."

Setol Cleanser HAS WHAT IT TAKES
TO MACHINE-SCRUB OILY FLOORS—

Faster cleaning action!

Cuts operating time of the scrubbing machine

Because *Setol* is specially compounded for the greater speed of *combination-machine-scrubbing*, it must *and does* work faster than average alkaline cleansers. *Setol* saponifies *and emulsifies* grimy oil and grease *instantaneously*. The wetting agent in *Setol floats the oil* for fast, easy, *and thorough* removal by the vac of a *combination machine* or with a separate vac unit. And because *Setol* stays fast-acting longer—does not spend its strength quickly as do ordinary oil and grease solvents—less is required to clean a given area. Thus *Setol* saves on materials and, by speeding the cleaning process, cuts operating time of the scrubbing machine . . . reduces labor costs . . . and saves on brushes. Best of all, *Setol gets floors oil-free clean!* Also acts as a disinfectant (contains pine oil), and leaves a pleasant, clean aroma.

- **A constant, fast-acting cleanser for machine-scrubbing cement, wood, wood block, metal, stone, and terrazzo floors**
- **Consistent use on cement floors prevents cement dusting . . . provides a finish that helps seal out waste materials**

Finnell 21-3P Scrubber-Vac

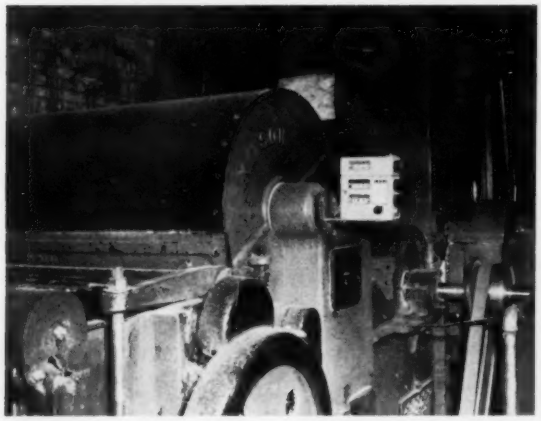
Applies cleanser, scrubs, and picks up—in ONE operation!

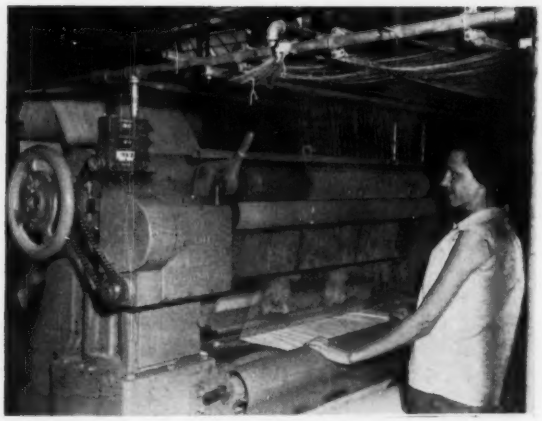
For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1309 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES





Meter on picker (left photo) is attached to top screen shaft, registers picker tender's piece rate pay directly. It was found to be impractical to install meters on cards, so card tenders' pay is determined by draw frame production. Roving and spinning frames have pulley-driven meters. Tufting machine (right) has pulley-driven meter, placed so that operator can see it from normal work position.

Counters register operators' pay in $ & ¢

at this spinning-tufting mill, and they like it

Staff prepared Exclusive

ALL OF THE counters on production machinery at Veteran Mills, Calhoun, Ga., an integrated spinning and tufting plant, have been installed so as to read directly in dollars and cents of employees' pay, rather than in hanks, yards, or stitches.

The meters are driven through pulleys and gears so that they register directly the amount of piece-work pay the operator of each machine has earned in addition to his base hourly rate. To determine what is owing him, the operator has only to total the amounts on the meters on his machines, add that to his pay for hours worked, and he has quickly calculated what he should receive at the end of the week. Veteran Mills have found this to be an incentive to production and to end any disagreement over pay due.

C. M. Jones, president of Veteran Mills, offers the following suggestions for mills planning to install "pay meters:"

1. A good time to install meters is when a change in pay rates occurs, as for example on the effective date of pay increases brought about by the recent change in the Minimum Wage Law.

2. Don't hide the meters; put them in plain sight where the operator can see them from the position where he usually operates the machine.

3. Don't complicate the arithmetic of pay calculation. The employee should be able to determine his pay by simple addition, so the meter should register his piece-rate wages directly. If rates or speeds change, the meter should be adjusted by installing new pulleys or gears, rather than using an involved factor to take account of the change.

4. When meters are installed, explain their operation and the reasons for their installation clearly to employees, to forestall dissatisfaction because of misunderstanding of their purpose or effect.

5. Employees must be condent that meters are accurate.

6. Once a rate is decided on and put into effect, stick to it. Frequent changes are confusing and disrupt employee morale.

7. To prevent tampering, meters must be installed on machines so securely that they can only be removed by a mechanic.

8. Don't leave gears or pulleys lying around. In fact, at Veteran Mills it is considered best not to keep extra gears or pulleys even in the supply room. When a change is required, new gears or pulleys are ordered or made.

All meters at Veteran Mills are Veeder-Root.

High speed (5000 stitches per minute) of sewing machine used for tufting dictated that meter be driven through pulleys and 100-1 gear reduction box. Meter shows that operator has earned $25.71 for piece work, in addition to her base rate.

You Have 3 Big Advantages

A Permanent Hand
Lasting Crush Resistance and
Dimensional Stability
Higher Breaking Strength and
Abrasion Resistance

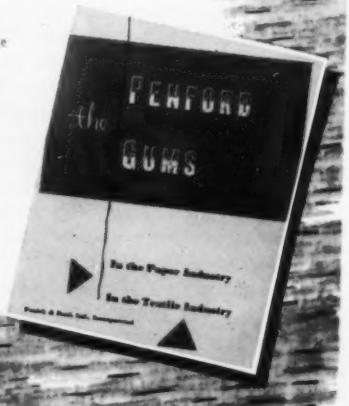
with the use of

PENFORD FINISHING GUMS

These new starch ethers give excellent results in textile operations when combined with either urea-formaldehyde or melamine resins. If you are a textile finisher or processor who does not know about the ease and simplicity of using Penford Finishing Gums, Penick & Ford offers the services of their Technical Sales Service Engineers. They will be glad to advise you as to the best Penford Finishing Gum for your finishing requirements and how to best apply it with your finishing equipment.

Penford Gums

This valuable brochure is available upon request. Send for your copy now.



PENICK & FORD, LTD.
INCORPORATED
420 LEXINGTON AVE., NEW YORK 17, N.Y.; 1531 MARIETTA BLVD., ATLANTA, GA.;
CEDAR RAPIDS, IOWA; 16 CALIFORNIA ST., SAN FRANCISCO 11, CALIF.

(U. S. Patent Nos. 2,516,632; 2,516,633; 2,516,634)

Blue Ridge

(continued from page 117)

standing of company objectives, policies, and practices.

(6) There was inadequate understanding about how well supervisors were doing on the job.

It is a "must" to define objectives; get the best men for the job; give the best training; let the participants develop the program; try out the program in actual practice; and then true up the program, Mr. Fincher asserted.

T. G. Ford, director industrial relations, American Enka Corp., Enka, N. C., told the audience to make supervisors a part of management in fact as well as theory. Have a well defined objective; delegate authority to supervisors; and keep them currently informed, he said. You can't have teamwork unless the team knows the "score."

In summary, Mr. Ford said:

(1) There should be a clear-cut status between supervisor and non-supervisor.

(2) Be sure supervisors have enough authority.

(3) Have a clear plan of organization describing the supervisors' position.

(4) Be sure supervisors are informed of objectives and consulted before decisions are made.

(5) Be sure the method of pay reflects management's position.

(6) Be sure there is prestige and distinguished status for the supervisors.

Scene of the 37th annual Southern Industrial Relations Conference.

PHILOSOPHY of management. Josiah Crudup, president, Brenau College, Gainesville, Ga., set forth that intellectual, spiritual, and social adventure comprise a balanced experience for man. Reduce tensions and improve brotherhood should be the theme, he continued.

A suggested philosophy of management includes the following:

(1) Recognize that man is in a modern world, and use all available devices to improve surroundings.

(2) Recognize religion, believe in every man, treat fellow man as brother, and deal fairly with fellow men.

(3) Recognize society and the tensions brought with groups; work with groups to solve problems.

(4) Recognize members of the organization and work for benefit of company and operative whose objectives are common.

Executive views

(continued from page 88)

ment. His statement:

> This would put a wall around us and bring retaliation from every nation in the world.

There are not too many countries in the world today that love or even trust Japan. There is a difference between being thick-headed and thin-skinned, and thin-headed and thick-skinned. Just who is going to retaliate against us if such quotas are set? Japan? Retaliation probably means, in this instance, that Japan would withdraw from the influence and orbit of the Western Powers.

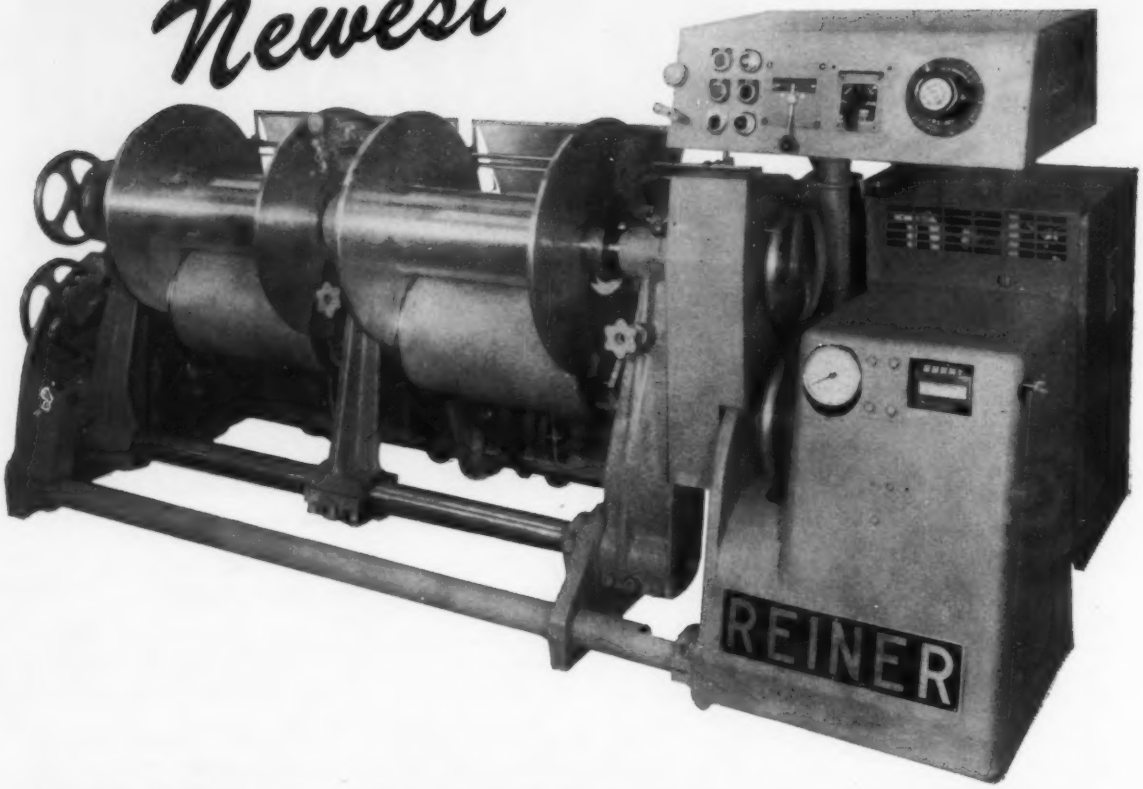
To keep Japan with the West, it appears that the United States textile industry will have to become the sacrificial lamb. What else is there to think? The senator's proposal, however, did underline one fact: There are *no* quotas on Japanese textile imports!

HOW CAN WE FORM our battle-lines and overcome this menace to our industry? First, the North and the South have got to set aside their sectional rivalries—wage differential and low-cost issues—other domestic difficulties between them, if any, and join together in a great crusade to overcome a far greater peril. And this crusade should include a patriotic appeal, a national resurgence, to buy *Made in America* textiles.

Perhaps nothing could be more powerful, from a political viewpoint, in supplementing a *Made in America* textile publicity campaign, than a strong coalition of northern and southern legislators in Washington forming a solid block of organized resistance to legislation and treaties that are now slowly and surely decapitating the textile industry in the U. S.

Finally, it is about time we realized fully what we are up against. We must fight back with every weapon in our possession,

HERE IS THE *Newest*



REINER WARPER ACHIEVEMENT

Designed to:

- Reduce warping costs
- Save beam expenses
- Reduce yarn strain and imperfections
- Simplify operation
- Permit warping of either one 42" tricot beam, or two 21" tricot beams simultaneously
- Low, compact, functional design throughout
- Convenient access to yarn and controls
- Heavier construction to surpass modern mill requirements
- Can be adapted to tomorrow's larger flange diameter beams up to 32"
- Automatic doffing from beam carrier wagon, floor or dolly.

Additional information is yours for the asking.

From cone to finished fabric . . . there is nothing finer than

MACHINES BY REINER

Reiner offers a full line of equipment which includes: Knitting Machines — Warpers — Beamers — Creels — Famatex Tenter Frames — Gauged Doubling, Measuring and Examining Machines, Cloth Control and Marking Devices, etc., plus a ready supply of spare parts.

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WEEHAWKEN *(Only 10 minutes from Times Square by direct bus)* **NEW JERSEY**

and we have a potent one staring right into our faces and right under our very noses—patriotic appeals to buy *Made in America* textiles.

We must flash them from the billboards! Publish them in the newspapers and magazines! Flash them everywhere and anywhere! Use every legal means—but flash them! Every textile organization should get behind *Made in America* textiles publicity campaigns. And use a big lettering stamp *Made in America* textiles.

Prepackaging *(continued from page 131)*

rolled piece, to 50 to 60 packages per minute where small underfolded work is being done.

Various attachments can be applied to these machines to do additional jobs. One, a premarker operating in conjunction with the film feeder, can cut out a manual marking operation in the mill packing and shipping department.

Other attachments include an electronic registering device to assure proper placement of printed paper around the product, top labelers, end labelers, extended infeed conveyors, and tear tape applicators.

Note. The field of packaging is large. Materials and methods used cover much more than the flexible, transparent film packaging described herein. (For example, one blanket mill is packaging its product in a cardboard box with a transparent window). This particular phase was selected, however, because of the relative newness to the textile industry of the techniques peculiar to it.

Acknowledgment

Much of the factual material on which this article is based was supplied by Hayssen Manufacturing Co. The editors express their appreciation for the valuable assistance rendered by officials of this firm.

How one mill improved its paper leno fabrics

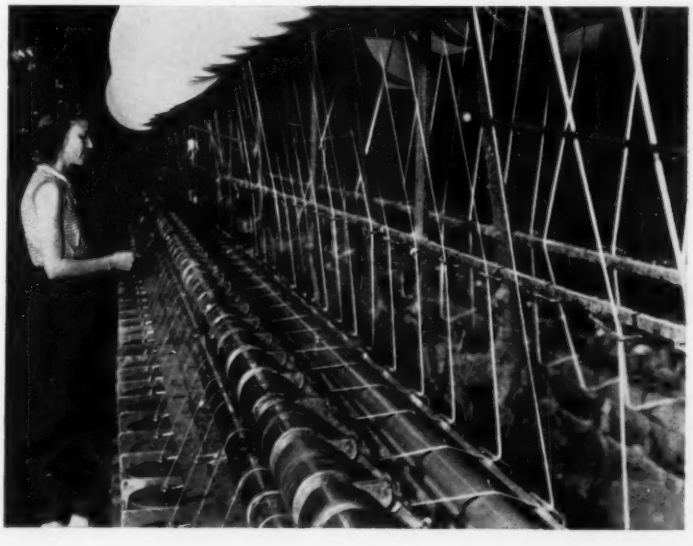
A COATINGS system, which is based on a latex that is described as having an unusual capacity for binding pigments and fibers, for the pigment dyeing of paper at the twister just before twist is inserted to produce kraft yarns for the weaving of leno fabrics used in the manufacture of bags for produce such as onions, potatoes, etc., is reported to have provided substantial savings for Lone Star Bag and Bagging Co.

Previously this bag manufacturer had used organic dyestuffs in its coatings system. Poor wet strength of fabrics was encountered and colors rubbed off the leno material easily. By adopting the new system, wet strength has been improved and color rub-off reduced.

During the operation, insoluble pigments become mechanically bound to the fibers through the film-forming properties of the Pliolite latex which is a styrene-butadiene emulsion polymer produced by the Chemical Division of the Goodyear Tire & Rubber Co. As a result, better light aging of fabrics has been experienced and dyeing costs have been reduced. Lone Star Bag and Bagging has also realized lower equipment costs because of process simplicity.

Bags made from fabric dyed in this manner are said to have lasting strength, flexibility, and abrasion resistance. These qualities are attributed to the additional firmness which is introduced by the latex without allowing the fabric to become stiff or boardy.

At the twister kraft paper is coated with a simple mixture of water-dispersed pigments and latex. Note the emulsion trough and applicator roll at the right of and parallel to the delivery rolls.



BARBER-COLMAN

will exhibit

at the nineteenth

SOUTHERN TEXTILE EXPOSITION

GREENVILLE, S. C.

OCTOBER 1st to 5th, 1956

40" DW LARGE-PACKAGE WARPER

The general idea of larger packages, popular in recent years, has led to the development of a new Super-Speed Warper capable of winding beams up to 40" head diameter. This machine, which provides economies through producing more loom beams per set, will be demonstrated in action.

66" FSH WARP DRAWING MACHINE

This Barber-Colman machine draws-in new warp through drop wires, heddles, and reed *all in one operation.* Selection is accomplished automatically from a metal pattern strip punched in accordance with the designer's draft. Numerous applications and advantages will be shown.

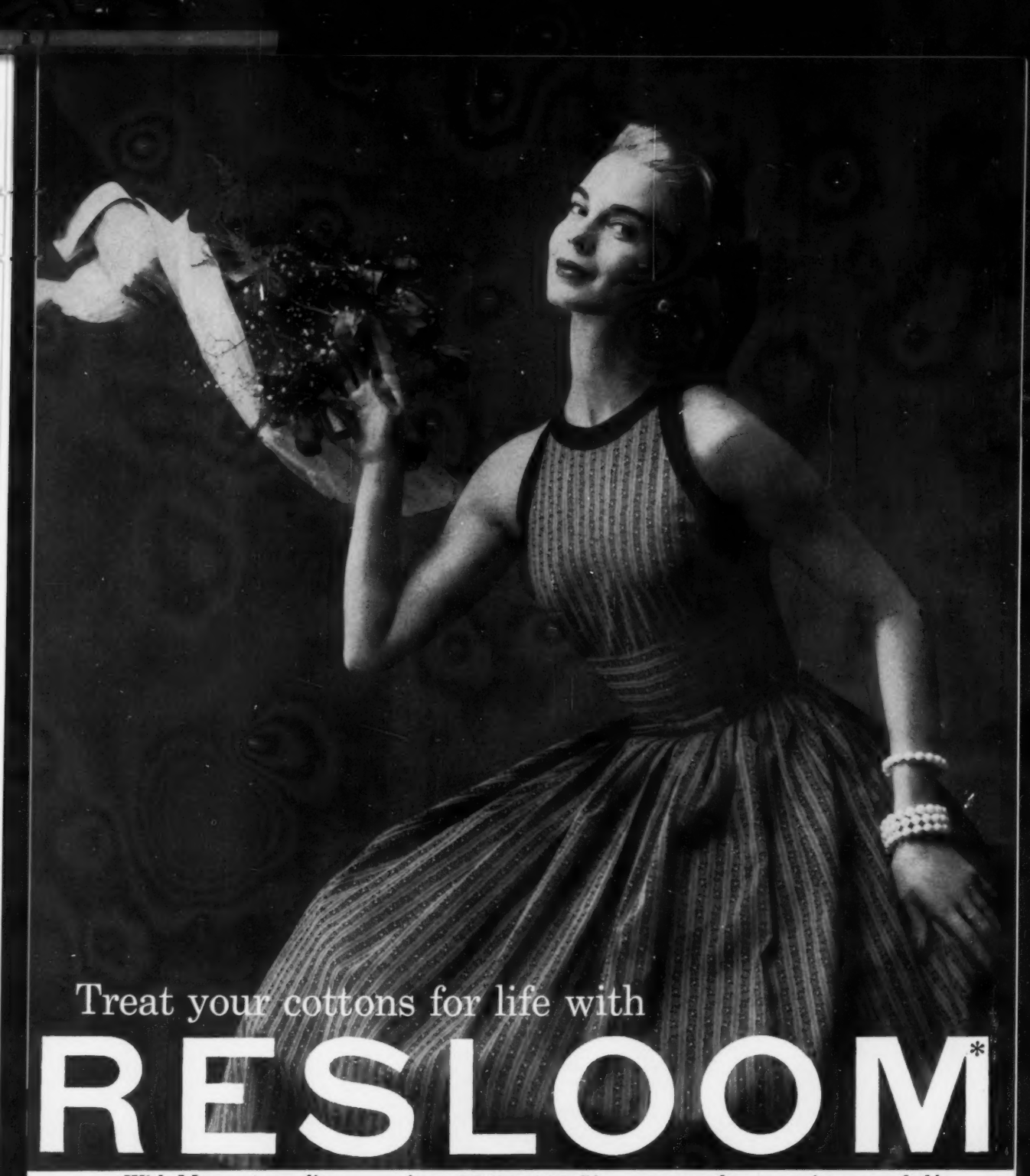
MODEL "M" WARP TYING MACHINE

This new type of machine, which is made in ten sizes from 36" to 126" length, ties-in the *full width* of the warp in one operation. It works directly back of the loom, and is available in several types to handle cotton, spun yarns, filaments, or synthetic yarn from a flat sheet or from an end-and-end lease.

see these Cost-Saving Machines in Operation

BOOTH 254

BARBER-COLMAN COMPANY • ROCKFORD, ILLINOIS



Treat your cottons for life with

RESLOOM*

With Monsanto cyclic urea resin . . . RESLOOM E-50 . . . your washout worries are ended!

MONSANTO

*RESLOOM: REG. U. S. PAT. OFF.

The outstanding effectiveness and durability of Resloom E-50 is becoming the talk of the industry. When cottons are treated with this Monsanto resin, they require little or no ironing—even after repeated laundering.

A Resloom finish also demonstrates long-lasting crush resistance and dimensional stability.

Ordinary modified urea formaldehyde resin reacts with itself. Not Resloom E-50. Monsanto designed its thermosetting resin to react exclusively with the fabric. Active ingredients diffuse into the interior of cellulosic fibers and actually modify fiber characteristics.

Call in Monsanto for expert counsel on how to "treat your cottons for life." In addition to Resloom E-50, Monsanto also supplies melamine finishing resins, tradenamed Resloom HP and M-75, as well as Catalyst AC for stepping up curing efficiency. Write on your letterhead for technical bulletin and experimental samples. Monsanto Chemical Company, Plastics Division, Room 1038, Springfield 2, Massachusetts.

WHY ACCOTEX APRONS GIVE LONG, TROUBLE-FREE SPINNING

Many special Armstrong tests help develop longer-lasting aprons. Here's the story of one that literally tears rubber apart.

To make sure that Accotex® Aprons have more than enough strength, toughness, and tear resistance for today's high-draft spinning, Armstrong textile engineers subject a sample of every mill batch of synthetic rubber to a special tear test.

The photographs below—taken with a high-speed camera—show how this test works. A synthetic rubber sample is gripped between the jaws of a special test machine and then torn apart. The machine automatically measures and records the tensile force needed to stretch the rubber beyond its elastic limit.

This tear test is used in conjunction with many other research techniques aimed at developing Accotex Aprons with just the right frictional properties, flexibility, and resistance to oils, solvents, and ozone. And all these tests go far beyond conditions likely to be encountered on your frames. This specialized research—matched by the most advanced production facilities—is your assurance that Accotex Aprons will spin top-quality yarn year after year.

No matter what type of equipment you're using, no matter what kind of fiber or blend you're spinning, there's an Accotex Apron specifically engineered for your needs. If you're not already using Accotex Aprons, ask your Armstrong representative to arrange for a test frame next time he calls. You'll see in a short time how they can improve your yarn quality.

Write today for your copy of the new booklet, "Armstrong Textile Roll Coverings and Mill Supplies." It gives information on Accotex Aprons for both single- and double-apron frames—plus facts on other Armstrong textile supplies. Armstrong Cork Company, Industrial Division, 6409 Ivy Street, Lancaster, Penna.

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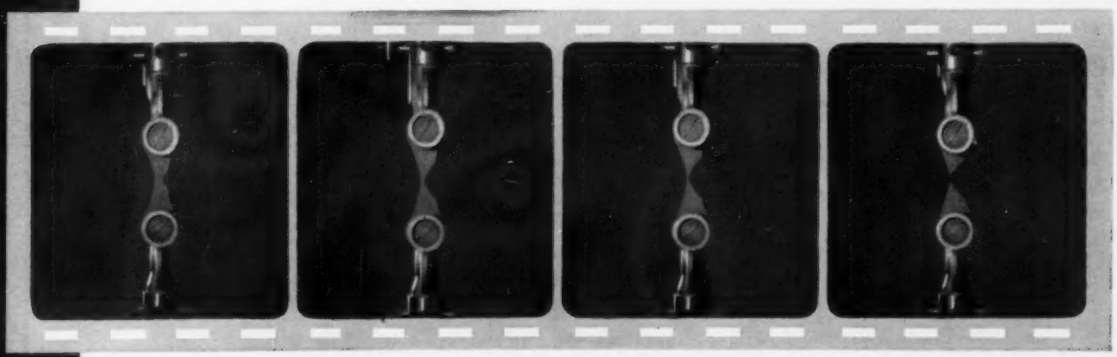

PHOTOGRAPHS TAKEN AT INTERVALS OF 1/1000 OF A SECOND show how special tear tester pulls apart synthetic rubber samples. Machine automatically measures and records tensile force necessary to tear rubber, helps Armstrong engineers develop stronger aprons for all types of long-draft frames.

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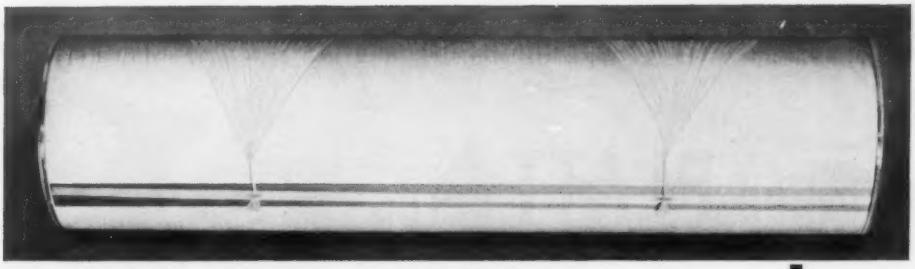

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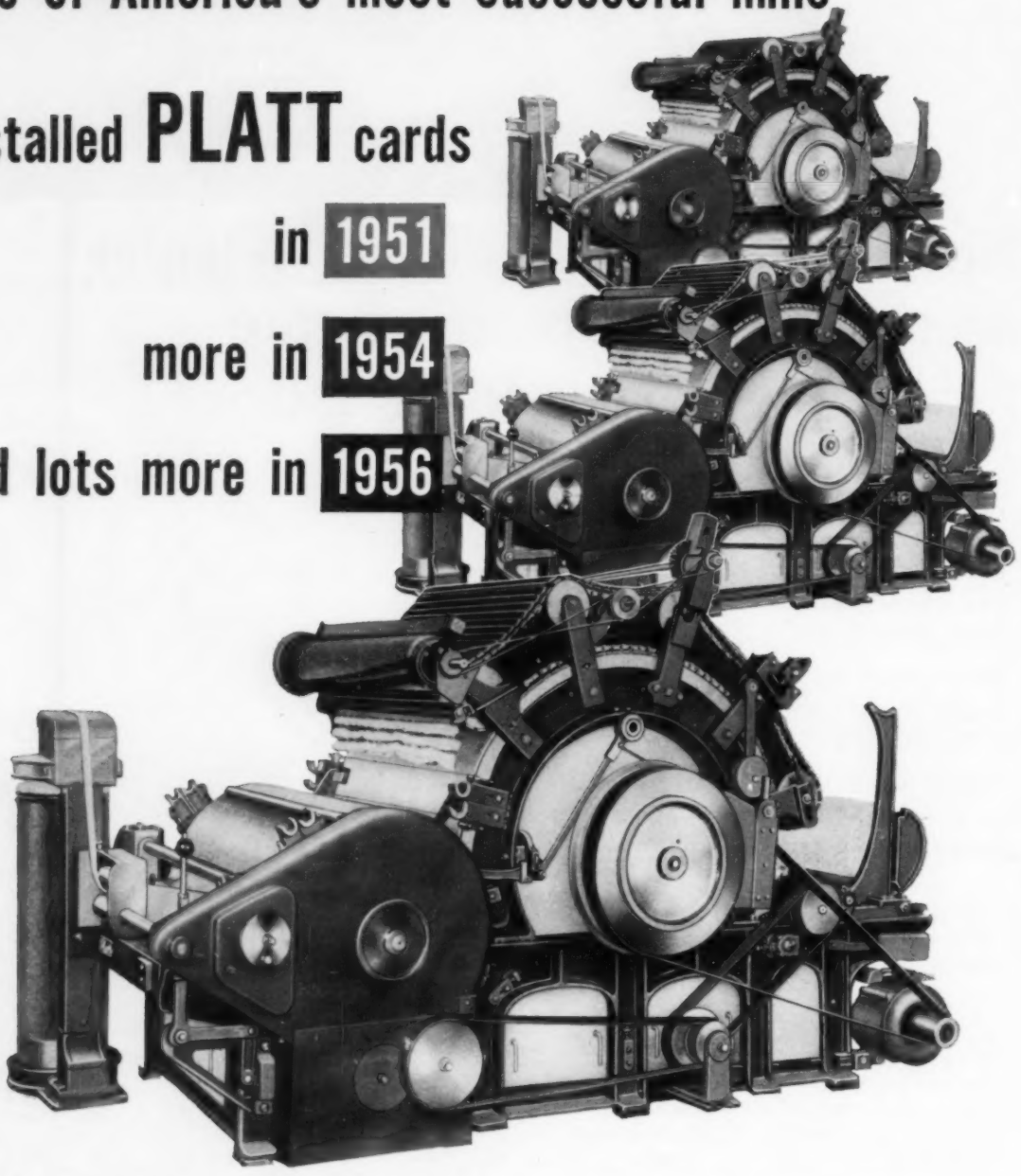

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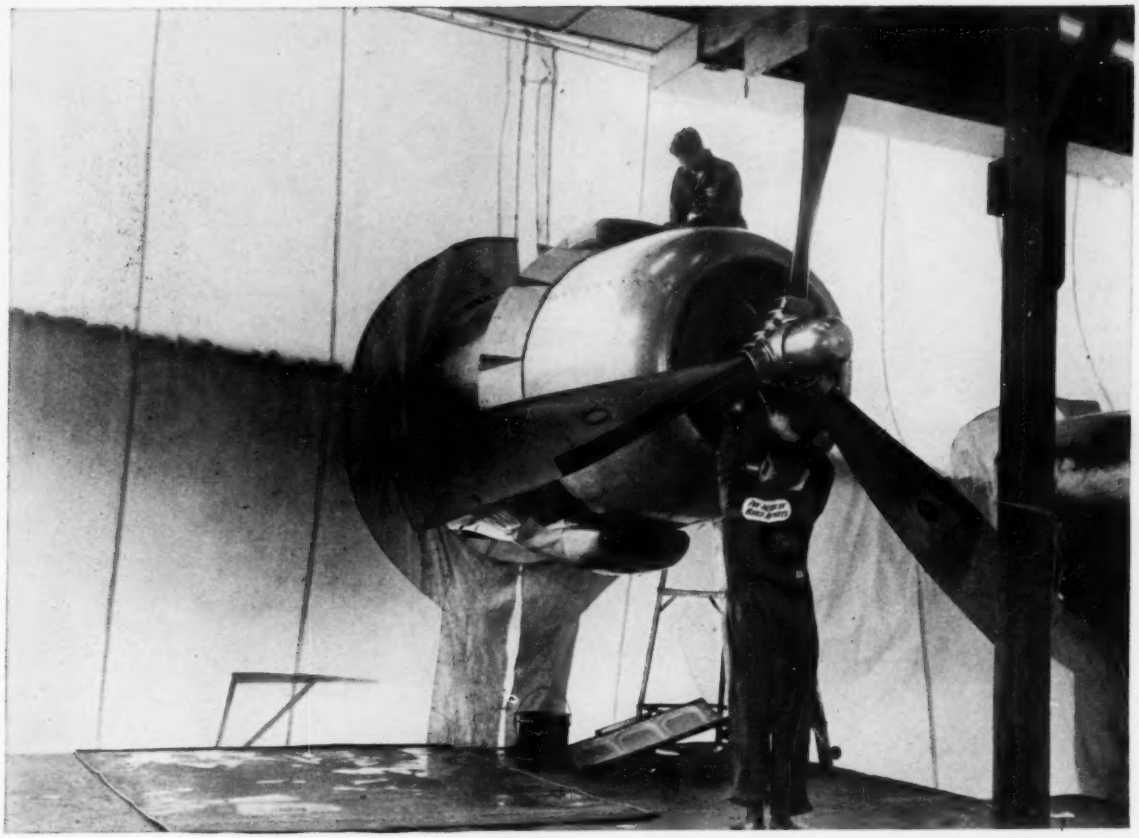

NEW Herculite translucent engine dock curtain makes light work of engine maintenance for Pan American at International Airport, N. Y. (Photo courtesy Pan American World Airways.)

New translucent tarpaulin with F-36 fiber speeds engine work

"Right on the beam" is the pleased reaction of Pan American World Airways mechanics to this new translucent engine dock tarpaulin by Herculite Protective Fabrics Inc., Belleville, N. J.

Secret of success of this tarpaulin is the new Celanese stronger-than-steel fiber, Fortisan-36 rayon, which not only provides tremendous strength but also permits translucent construction. The Herculite fabric is a double lamination of vinyl plastic over Fortisan-36 mesh.

According to Mr. Sy Hyman, president of Herculite, Fortisan-36 helps him produce fabrics that are easier to handle because they're substantially lighter for a given strength. These tough fabrics are also waterproof, fire-resistant, rot- and mildew-proof. Key advantages like these, he adds, make translucent fabrics based on Fortisan-36 ideal for applications like marine hatch tents and telephone linesmen's tents.

Find out more about sensational new Fortisan-36, the fiber you can depend on for the tough industrial jobs. Write Celanese Corporation of America, Industrial Sales Dept., Textile Division, Charlotte, N. C. *Branch offices:* 180 Madison Ave., New York 16; 22 W. Madison Street, Chicago 2, Illinois.

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- Its Rotary Traverse — an exclusive one-piece combination driving drum and traverse guide — eliminates all moving parts connected with reciprocating guides, and reduces maintenance, assures uniform packages and top quality yarn.
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Roto-Coner Winders are quiet and trouble-free, easy to operate and to maintain. For further facts on how these machines can benefit your own open-wind package operations, write for illustrated booklet.

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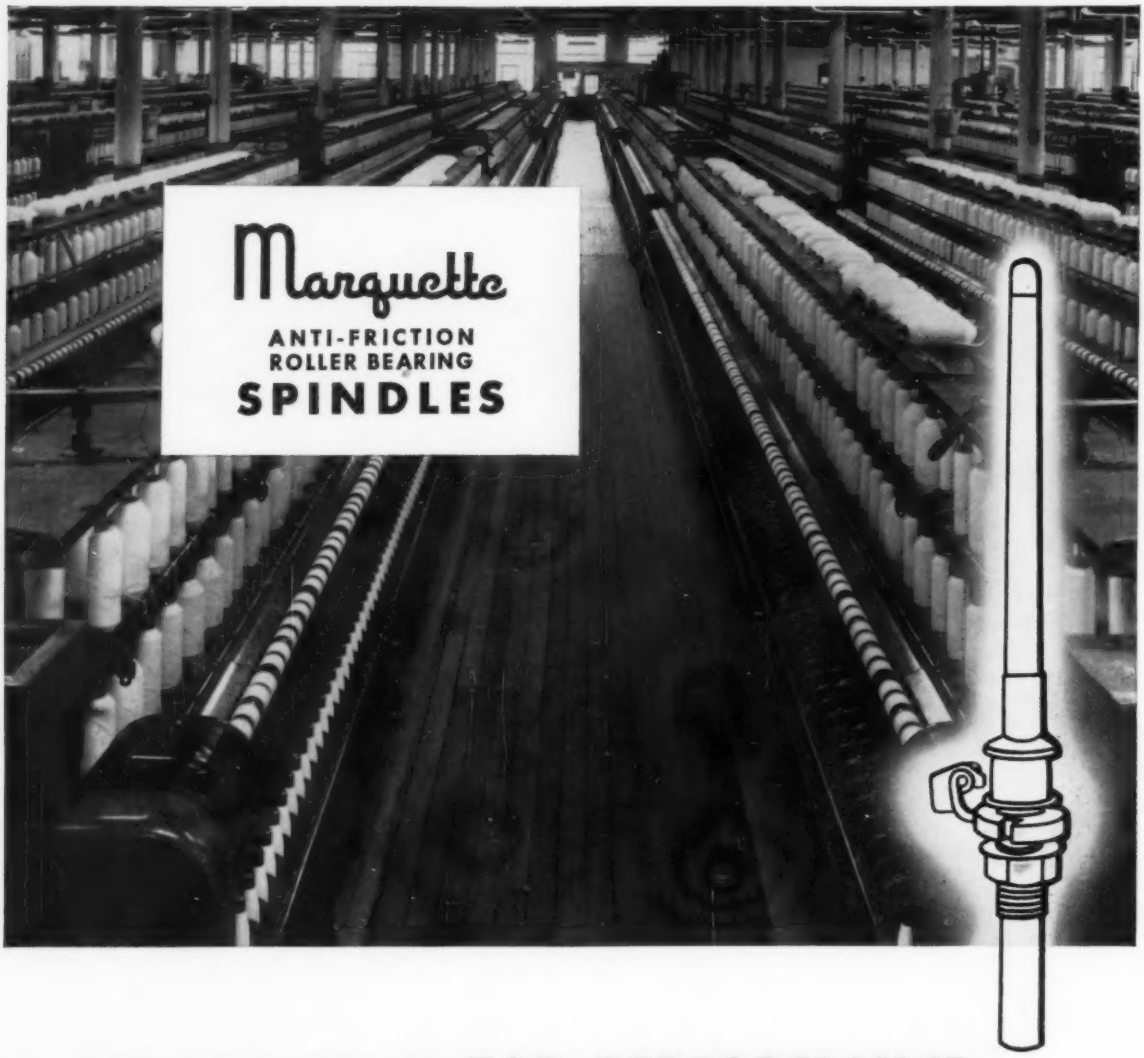

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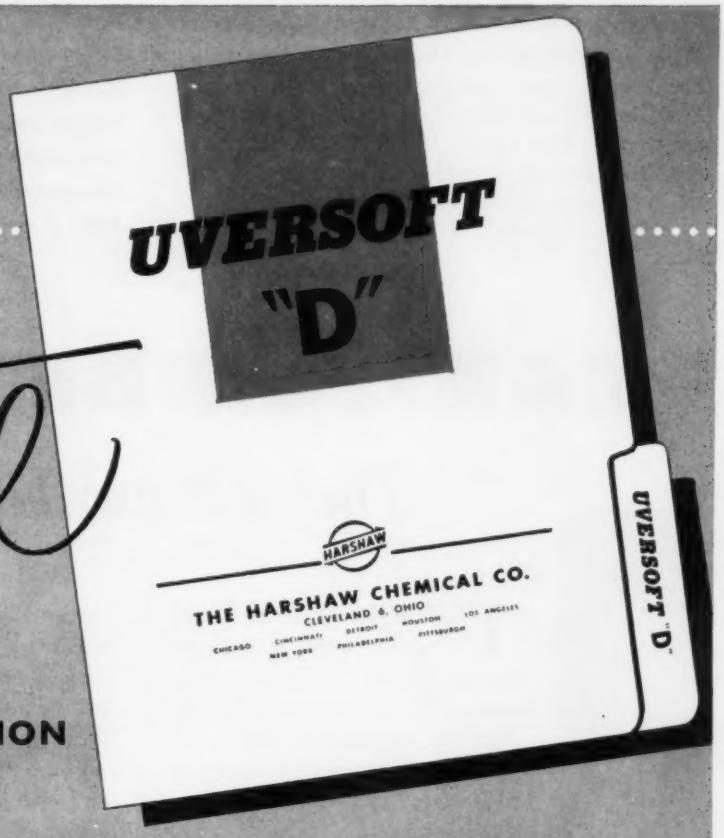

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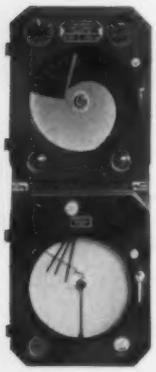
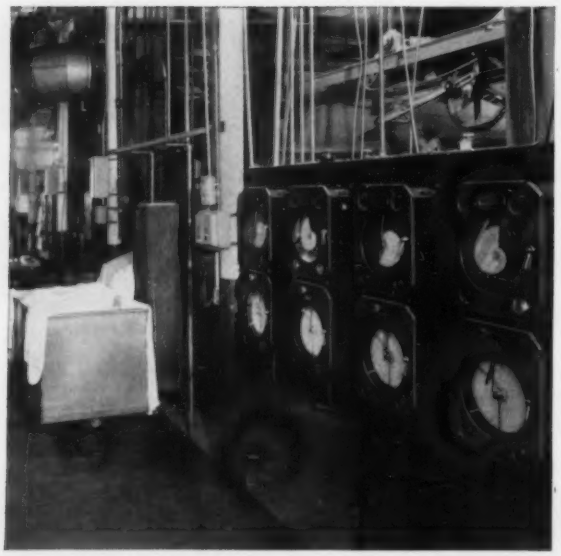
They all use Taylor FULFLEX®

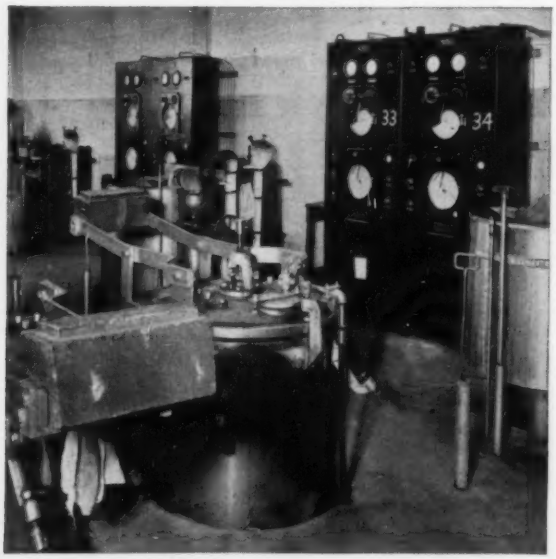


THIS IMPRESSIVE LIST of valued customers testifies to the dependability and accuracy of Taylor controls for the Textile Industry. If you're interested in cutting costs while maintaining uniform quality, take advantage of the experience of these famous mills.

Taylor FULFLEX Dye Machine Controllers met the specifications of these companies because these instruments insure complete dyeing uniformity and extremely close matching of shades. They also save steam and labor. The control system automatically regulates rate of rise, hold time and temperature. The operator just sets three dials and presses the start button—a signal light tells him when the cycle is completed.



The president of this company says: "Without Taylor FULFLEX Time Cycle Controllers we could not maintain the accurate and precise control which is so necessary in our SYNTHETIC DYEING operations."



Another example of cutting costs and keeping quality high—these PACKAGE DYE MACHINES are under the accurate control of Taylor FULFLEX Time Schedule Controllers in a large worsted mill.

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Perry Knitting Co. Inc., Perry, N. Y.
Philadelphia Dye Works, Philadelphia, Pa.
Standard Knitting Mills, Inc., Knoxville, Tenn.
Verdun Mfg. Co., Inc., Woonsocket, R. I.
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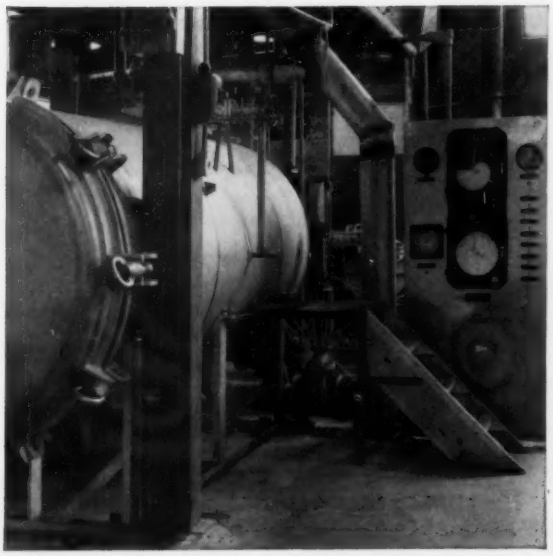
THEIR EXPERIENCE ?

Dye Machine Controllers!

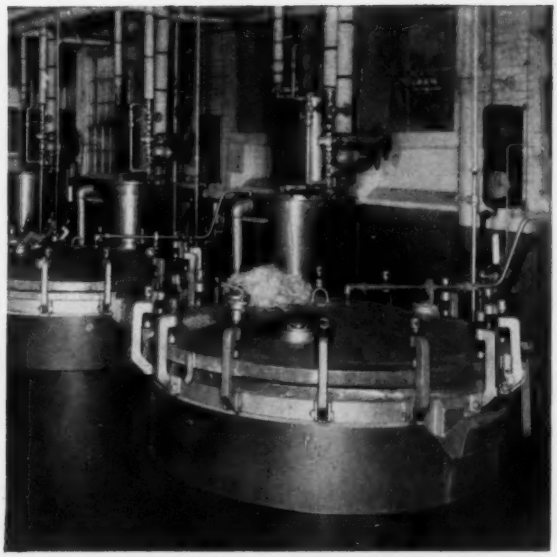
There are no cams to cut for different cycles when your dyeing is controlled by Taylor FULFLEX Dye Machine Controllers. To repeat any part of the cycle, just reset the dial and push the start button again. Controlled rate of cooling is available as an optional feature.

Whether you use *beam, piece, skein, package* or *top dyeing,* there is a Taylor Control System specifically designed for your needs. Just call your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Taylor Instruments MEAN ACCURACY FIRST



Fully automatic dyeing with a Taylor FULFLEX Time Cycle Controller on this HY-PRESS DYE MACHINE. Pressure gages on either side of the Taylor FULFLEX Controller indicate inside-out and outside-in pressures.



Typical raw stock dye house in large southern finishing mill where the responsibility for uniformity of dyeing is placed on FULFLEX Controllers. Scores of similar installations testify to the dependability of Taylor controls.

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THE NEW CONCEPT IN CYCLIC UREA RESIN . . .

For the past eighteen years *cyclic* urea-formaldehyde resin has been the work horse of the finer finishes in quality fabrics throughout the textile industry. More often than not, market price of successful fabrics were dictated by finishing cost.

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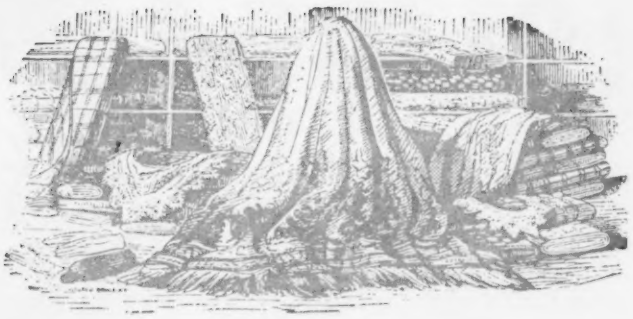

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Wica's new concept in manufacture promises to revolutionize production finishing. Finishers heretofore limited to paste resins can open new markets — successfully competing in the active market with fine modern finishes. The price of Wica's cyclic urea-formaldehyde resins are no longer prohibitive — making this most desirable of finishes available to a wider range of fabrics than ever before. The famous Wica name guarantees you all the qualities you desire in cyclic urea-formaldehyde resins — and at an unbelievable new low cost.

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Knitting Section

Circular knitters--watch these essentials

by C. C. Auton
Exclusive

NO CUT-AND-DRIED or ready-made system of knitting can be applied, but there are several fundamentals which every supervisor should demand in the knitting room to maintain a successful operation.

Yarns. Correct identification of yarns is important. Every knitter should know how to determine the size of a yarn and to recognize the construction of that yarn. This information is usually printed on a small tag located on the inside of each individual cone of yarn.

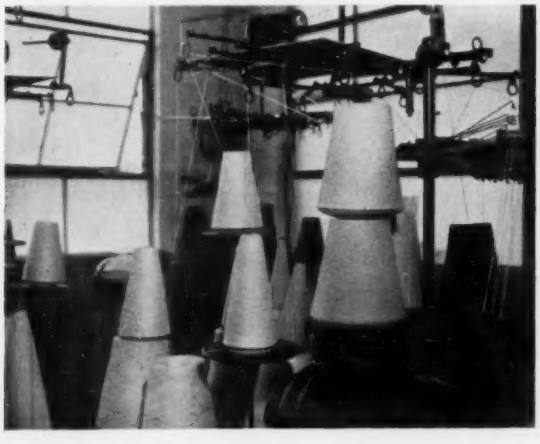
One of the surest ways to produce bad socks is for a knitter to mix yarn sizes or constructions; for example, 14s run beside 10s yarn, or soft spun yarn run beside mercerized yarn. The resultant socks are unsalable units and represent wasted yarn, labor, and production time. The best preventive for this trouble is to be sure every knitter knows how to distinguish different yarns. If the knitters don't know, instruct them.

Many mills practice "stacking" partially used cones of yarn on top of full cones with the ends tied to provide a larger supply of yarn for continuous feeding. Knitters should not stack or tail cones which are too large.

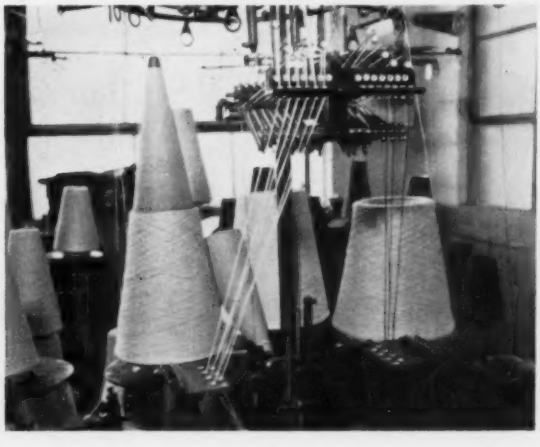
Every knitter should be thoroughly acquainted with the assigned battery of machines, and know how fast each of the knitting yarns is consumed (body, elastic, heel, etc.) so the amount of each yarn needed may be anticipated.

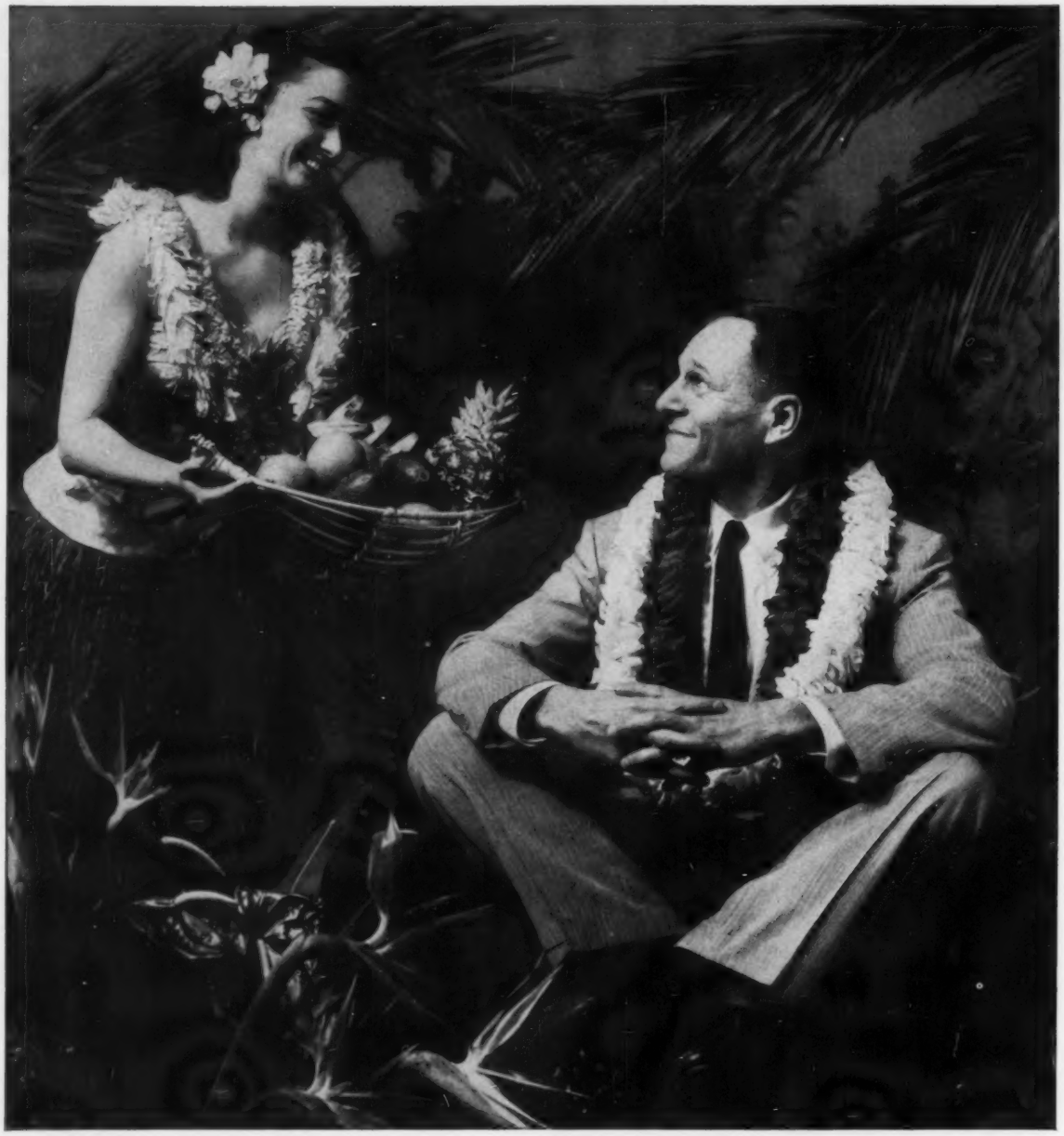
On some of the newer knitting machines a one-pound cone of 12s yarn may last for 72 to 216 hours of continual running. This amounts to from three to nine days. If a large cone of yarn is on the machine and will last for a long in-

Incorrectly stacked yarns are sources of trouble. Yarns should be kept straight and in line with the yarn guide.



Remove empty cones immediately to prevent yarn fouling and breaking. Yarns should not rest against each other.





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terval, it is bad practice to stack another large cone on top. To do so will cause bad work in several ways.

First, the bottom cone of yarn remains inactive so long that a thin layer of lint accumulates and forms slubs at the yarn guide. Such accumulations cause drag which eventually breaks the yarn. On takeup machines the same condition may cause loopouts.

Another difficulty is that the large cone stacked on top is too close to the yarn guide, which results in excessive drag and tight stitches.

Finally, if styles or colors have to be changed after yarns have been stacked, there is twice as much yarn to handle and replace.

When a cone of yarn has been stacked and the yarn on the top cone has run out, it is important to remove the empty cone immediately. If the empty cone stays on top of the running yarn, the empty cone will cause the running yarn to jerk against it when the circumference of the yarn cone approaches the size of the empty cone. This condition sometimes breaks the yarn, and in some instances the cone is thrown off, thereby fouling or breaking other yarns.

When a cone of yarn is placed on a knitting machine, the strand should travel with a minimum of deflection in line with the thread guide. If the yarn is out of line with the guide, excessive drag results in tighter stitches and unbalanced knitting. In some instances too much drag breaks the yarn. Also, one yarn should not be permitted to rest against another yarn. This condition produces breaks.

Tensions. Each yarn should be threaded into the appropriate tension. Sometimes knitters get in a hurry and put a body knitting yarn through a heel tension. Although this yarn may be threaded through the correct feed finger at the knitting cylinder, the tension will be too tight or too loose.

It is also important to have the yarns threaded through the correct feed fingers. The knitter should learn which feed finger supplies yarn to each portion of the sock and thread the machine accordingly.

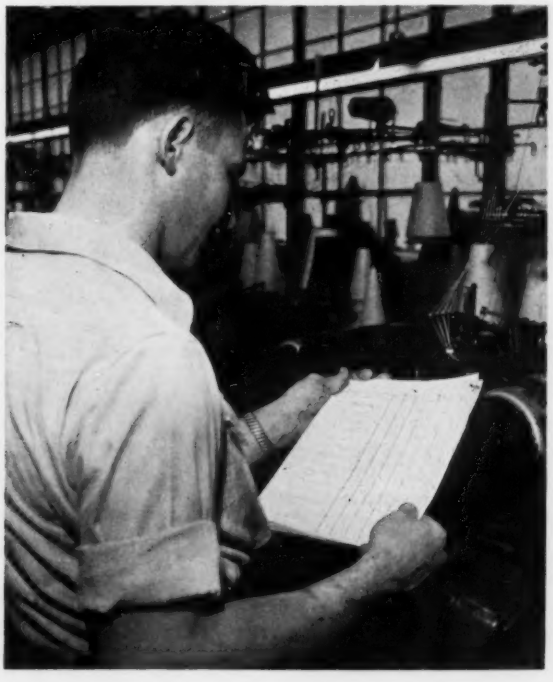
Tuck the tailing up into the cone. Don't place cones of yarn on the floor around the knitting machines.

It is easy for a knitter to forget about the tailing of yarn when placing a new cone onto the machine. It is good practice to tuck this end up into the cone so that the end will not hang down and foul another yarn.

Knitting yarns must be kept

Inspect socks for such irregularities as dropped stitches, dislocated pattern, streaked yarns, etc.

Check knitting order to determine the numbers, sizes, styles, constructions, and colors to be run.



clean. Contamination from oil, grease, lint, or dust produces substandard quality work. A few simple rules follow:

(1) Don't place yarn on the floor around the knitting machine.

(2) Don't store an excessive amount of yarn around the machine. (Such yarn will collect lint, possibly of another color, thereby making slubs and spots of another color in the sock.)

(3) When returning unused yarns to bins or boxes, be sure that each cone is replaced in the correct container for the color, construction, and count of yarn.

(4) Each knitter must do his part to keep his battery of machines clean and free of lint.

(5) Don't handle yarns with dirty or oily hands.

(6) Don't handle yarns excessively.

(7) Don't put yarns into dirty containers.

(8) Never place yarns near an emery grinder, oil pump, or soft drink box where the yarn may easily get soiled.

Preliminary Inspection. It is important to inspect the socks for such irregularities as dropped stitches, mislocated pattern, streaked yarns, tight stitches, unbalanced knitting, oil spots, socks out of size, and for correct colors.

It is equally important for a knitter to observe the machines in passing and to notice such things as needles loading with excess yarn, any unnatural scratching, grinding, or squeaking noises which indicate improper lubrication and which should be reported to the fixer immediately. Slubs forming and other yarn irregularities should also be reported.

A good knitter is able to determine the size of the sock by feel and by actual count. Every knitter should be taught the number of links required for each particular size to determine whether each machine is on the correct size.

Knitting To Order. Each knitter, upon assuming his duties at the beginning of each shift, should check the knitting order for the assigned battery of machines to determine how many dozens, how many styles, sizes, constructions, and colors are to be run on that shift.

It is bad practice for a knitter to guess at production figures and to knit perhaps twice as many size 11s as the knitting order called for. It is equally bad to knit the wrong style, color, or construction. These mistakes cost a lot of time, money, and material.

If socks are started right by the knitter, they can be finished right. Otherwise, a lot of good resources are wasted.

Well-made nylon tricot has low shrinkage

● PROPERLY made nylon tricot fabric can be stabilized so that the sum of the warp and filling shrinkages is in the range of one per cent, it is reported in a technical bulletin recently released by Du Pont's Textile Fibers Department.

Satisfactory dimensional stability can be obtained if the fabric is heat-set at realistic finishing dimensions, the bulletin states. Even the best heat-setting conditions cannot prevent shrinkage if the fabric is stretched excessively during setting or finishing. In addition, excessive stretching during heat-setting gives the fabric a sheer and lustrous appearance.

The testing procedure recommended for determining the stability of nylon tricot is as follows:

1. Condition at constant temperature and humidity a sample of nylon tricot approximately 25 inches square.

2. Measure on the sample an 18-inch square.

3. Treat the sample in boiling water for 30 minutes.

4. Air dry in relaxed condition on a flat surface.

5. Condition as before and measure both the warp and filling shrinkage.

Because of the variety of types of heat-setting apparatus in general use, the bulletin does not make specific recommendations on heat-setting procedure. It does report good resistance to shrinkage and wrinkling can be obtained if the nylon fabric is heated to a temperature of approximately 420 F, using pin tenter frames with either hot circulating gases or radiant heating panels.

Three sequences are being used in finishing nylon tricot, according to the report. They are:

1. Scouring, dyeing, drying, and heat-setting.

2. Heat-setting, scouring, dyeing, and drying.

3. Scouring, drying, heat-setting, dyeing, and drying.

The first sequence is said to be the most widely used of the three and an economical method. However, setting as the final finishing step can yellow white goods and cause shade changes in dyed goods due to sublimation of some of the dyes, the bulletin points out. High yields of finished goods are difficult to obtain by post-setting since the fabric shrinks considerably during scouring and dyeing.

Heat-setting as the first step in finishing tricot (Sequence 2 above) helps to produce high yields, the report states, since shrinkage which would normally occur during scouring and dyeing is minimized. Disadvantages given for this method are that heat-setting in the grey may cause yellowing and soils "set" into grey goods are usually more difficult to remove.

Although Sequence 3 (setting between scouring and dyeing) is more expensive, excellent results are produced, according to the bulletin. Some yellowing may also be encountered by this method, but the fabric can be bleached to produce a good white.

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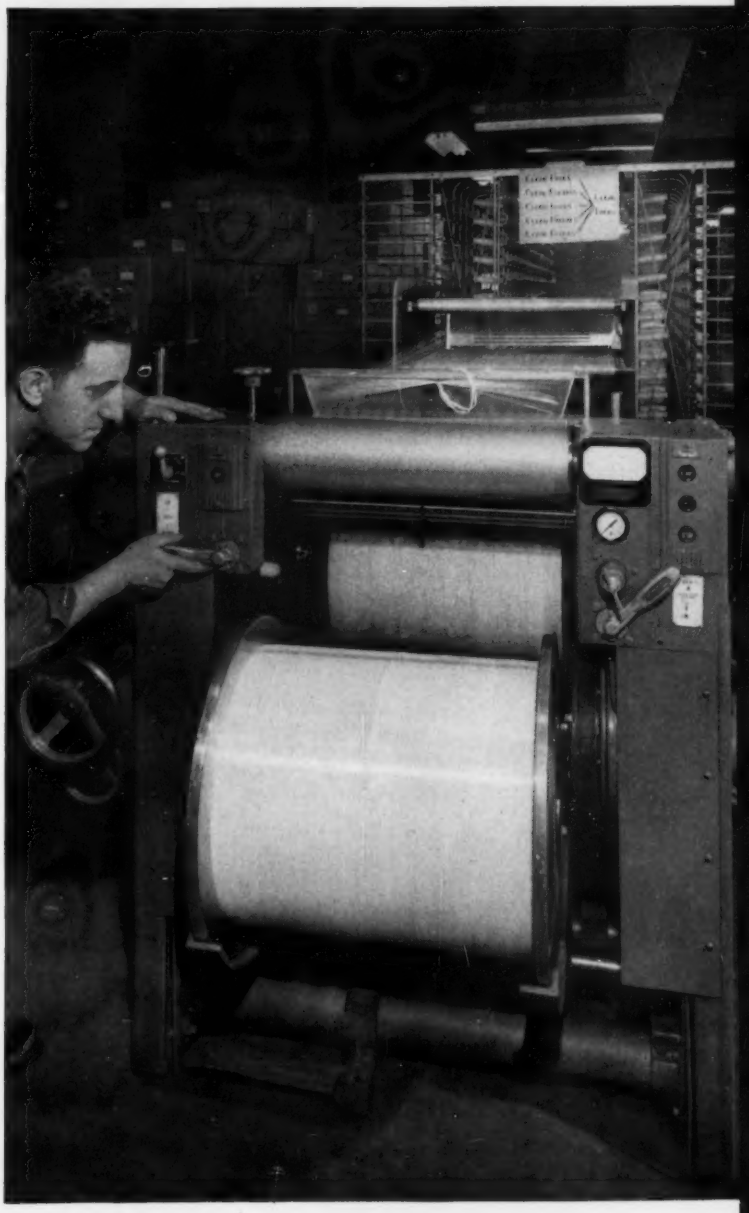

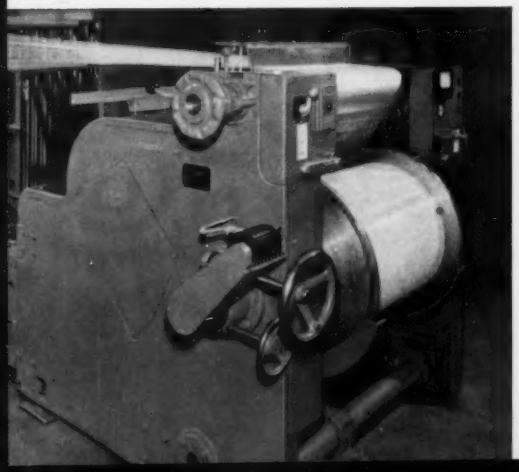

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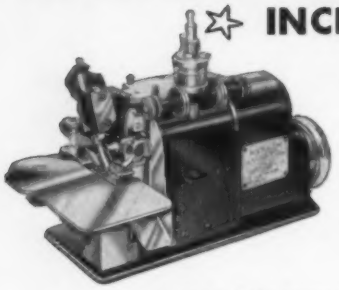

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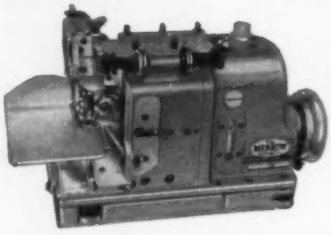

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Quality knitted outerwear

How to use Orlon in sweater and jersey fabrics

by J. R. Harris
Textile Fibers Department
The Du Pont Company
Exclusive

THE RISE in popularity of knitted outerwear has been steady in the past few years, and the outlook for increased demand is very encouraging. This increase in popularity did not "just happen;" it is the result of imagination, innovation, and creative design by the knitting trade, and of functionally engineered fibers and yarns.

An outstanding example of the versatility and flexibility of the knitting trade is the rapid and enthusiastic acceptance of Orlon acrylic fiber as the prime sweater yarn. In 1955 over 60 per cent of all the sweaters produced in this country were made of Orlon. Such wide acceptance of a fiber could only occur through the efforts of the yarn spinner, knitter, designer, and dyer.

When type 42 Orlon was first introduced in 1952, widespread interest was displayed by the knitting trade in the application of this fiber in sweaters. Type 41 had provided certain characteristics desired by the knitting trade, and type 42 possessed additional features which, along with the introduction of the high-bulk principle, made it particularly suitable to sweater manufacture. The ramifications of the high-bulk, or differential shrinkage, principle were not at once fully realized by the knitter, but the increase in bulk was very apparent and quickly accepted.

The first commercial high bulk yarn was made from a blend of relaxed and unrelaxed fibers which had been stretched by the Turbo Stapler. Shortly after the development of this principle, high shrinkage staple of Orlon acrylic fiber was introduced to enable the staple system spinners to manufacture high bulk yarns.

A third route for manufacturing these yarns is the Pacific Converter, using high shrinkage tow or the hot-stretching attachment for drawing regular tow to form the high-shrinkage component.

Extensive development work revealed that 30 to 40 per cent high shrinkage or unrelaxed fiber blended with 70 to 60 per cent low shrinkage or relaxed fiber imparted optimum bulk to the yarn. These blends are the most widely used today.

MENTION has been made that the ramifications of the high bulk principle were not at once fully understood. A discussion of this principle will explain some of the distinct advantages obtainable with this type of yarn. Foremost is the increase in bulk which occurs when a yarn blended from fibers possessing different shrinkage characteristics is subjected to relaxing conditions such as steam or boiling water.

The mechanics of this principle are:

1. The high shrinkage or unrelaxed component, shrinks to form the core of the yarn.

2. The low shrinkage or relaxed component is forced outward or bulked to form the surface of the yarn.

Results of this action are: (1) yarn diameter is increased; (2) yarn twist is increased; and (3) yarn weight per unit length is increased.

The yarn shrinkage is dependent upon the level of shrinkage in the high shrinkage component, and the bulk is dependent upon the degree of differential shrinkage existing between the two components. For example, a yarn containing a high shrinkage component possessing 22 per cent shrinkage and a regular shrinkage component possessing 3 per cent shrinkage, will shrink 22 per cent but will bulk based upon the 19 per cent dif-

Knitting With Orlon Yarns

Type of Knitting	Circular Jersey	Interlock	Full-Fashioned
Machine Gauge	10 thru 12 cut	10 thru 13 cut	21 to 24 gauge
Regular Yarn Yarn count	2/22-2/26 w.c.	1/24-1/30 w.c.	2/28-2/32 w.c.
Stitches per inch (measured in take-up)	14-18	15-19	15-21
High Bulk Yarn Yarn count	2/28-2/32 w.c.	1/30-1/32 w.c.	2/32-2/36 w.c.
Stitches per inch (measured in take-up)	10-13	11-15	15-19

ferential shrinkage.

New knitting techniques had to be developed before the advantages of high bulk yarns could be fully utilized. Finer yarn counts and fewer stitches per inch are needed to produce a garment of satisfactory weight and surface cover. The table [on page 193] illustrates the yarn counts and stitch settings which have been found to be a basis upon which further experimental work to produce a quality garment can be conducted.

THE WIDE acceptance of Orlon acrylic fiber has been based upon the aesthetic and functional characteristics of two- and three-denier-per-filament fibers. A very successful high bulk yarn has been made from a blend of two-denier, regular (low)-shrinkage staple and three-denier, high-shrinkage staple. After bulking, the fine-denier, low-shrinkage staple is forced to the surface, thus imparting a very soft and pleasing surface "hand;" and the coarser, three-denier, high-shrinkage fiber shrinks to form the core of the yarn which increases resilience and snap in the yarn. Here again the popular 60 to 70 per cent blend of regular-shrinkage fiber and 40 to 30 per cent high-shrinkage fiber is used.

New deniers, 4.5 and 6, are now being sold in staple and tow form. These fibers are being used to impart the crispness and firmness associated with coarse denier fibers. They are being utilized as the core fiber in high bulk blends for use in sweaters, bulky knits, and fine gauge jersey fabrics.

The use of Orlon acrylic fiber in the fine-gauge jersey field has been substantial but not as widespread as in the sweater market. The most popular fine gauge jersey fabric has been a blend of 80 per cent Orlon, 20 per cent wool. These fabrics have shown good aesthetic qualities—have demonstrated outstanding functional properties such as washability, pleat retention, and other aspects which offer to the consumer those "easy living" features which are so readily appreciated.

A NEW BLEND of regular and high-shrinkage fibers which promises improved fabric hand, resilience, and body is a mixture of 3-denier-per-filament regular-shrinkage fiber with 4.5-denier-per-filament high-shrinkage fiber and wool. Here again the heavier denier, high-shrinkage core fiber imparts crispness and firmness, while the finer denier fibers contribute to a soft, surface "hand."

There are three routes to making the jersey fabric of this blend:

1. The staple spinning system route, utilizing the 3-denier regular-shrinkage staple, the 4.5-denier high-shrinkage staple, and wool.

2. The Turbo Stapler route, stretching both the 3- and 4.5-denier-per-filament tow and steam relaxing only the 3-denier component prior to blending with wool.

3. The Pacific Converter route, utilizing the hot-stretch mechanism in processing the 4.5-denier component or using 4.5-denier high-shrinkage tow.

All three routes can be used to manufacture satisfactory yarns for fine gauge jersey knitting. However, careful consideration should be given toward properly engineering this blend on all systems. The amount by weight of each component part is of extreme importance in manufacturing optimum yarns. The following formula illustrates a simple calculation that can be used in preparing such blends:

For example if a blend of 3- and 4.5-denier-per-filament regular-shrinkage tow is to be made on the Pacific Converter using the stretching mechanism for the 4.5 denier tow, and two ends of each denier and wool, the calculation would be as shown in box below.

SINGLE YARNS are used primarily for this type of knitting, and yarn uniformity is of extreme importance. The need for uniform blending of the various components cannot be over emphasized. Uneven yarns and variable bulking along the length of the yarn can result in serious fabric deficiencies. Jersey is traditionally sold by ounce-weight and the failure to attain weight uniformity on a continuous basis presents problems to the knitter and cutter.

Fabrics stable to laundering and dry cleaning must be obtained to permit the manufacture of high quality garments. Such fabrics can be obtained by the use of large (30-inch diameter) knitting machines and by overfeeding on the tensionless calender in the finishing operation.

The use of high bulk yarns made from a combination of various deniers and the development of high shrinkage tow, together with the improved methods of dyeing the colors obtainable with Orlon offer even greater opportunities for the knitter and stylist to create an ever increasing demand for high style quality knitted outerwear.

PER CENT OF HIGH SHRINKAGE FIBER BY WEIGHT

$$\frac{\text{Weight of High Shrinkage}}{\text{Weight of High Shrinkage, Low Shrinkage, and Wool}} \times 100 = \text{Per Cent}$$

2 ends — 470M total denier 4.5 dpf tow stretched 50 per cent
2 ends — 470M total denier 3.0 dpf tow not stretched
Wool — 391 M total denier (612.56 grains per yard)

1. PER CENT OF HIGH SHRINKAGE FIBER
   Weight of high shrinkage tow before stretching:
   $2 \times 470M =$ 940M denier
   However, weight after stretching 50%:
   $\frac{940M}{1.5} =$ 626M denier
   Weight of unstretched 3 dpf tow — $2 \times 470M$ = 940M denier
   Weight of wool 391M denier = 391M denier
   626M + 940M + 391M = 1957M total denier

$$\frac{826}{1957} \times 100 = 32\% \text{ of high shrinkage fiber by weight}$$

2. PER CENT OF REGULAR SHRINKAGE FIBER

$$\frac{940}{1957} \times 100 = 48\% \text{ of low shrinkage fiber by weight}$$

3. PER CENT OF WOOL

$$\frac{391}{1957} \times 100 = 20\% \text{ of wool by weight}$$

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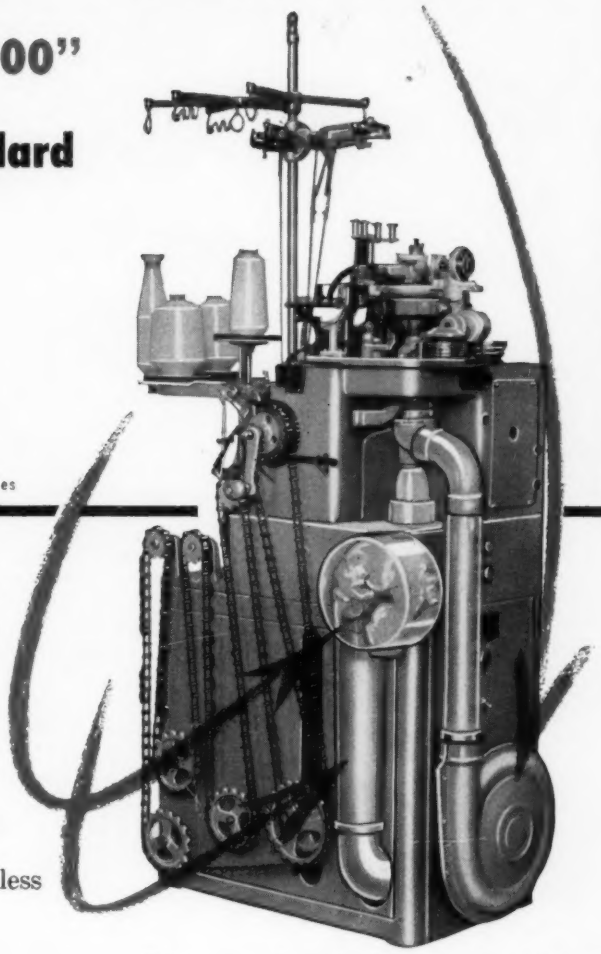

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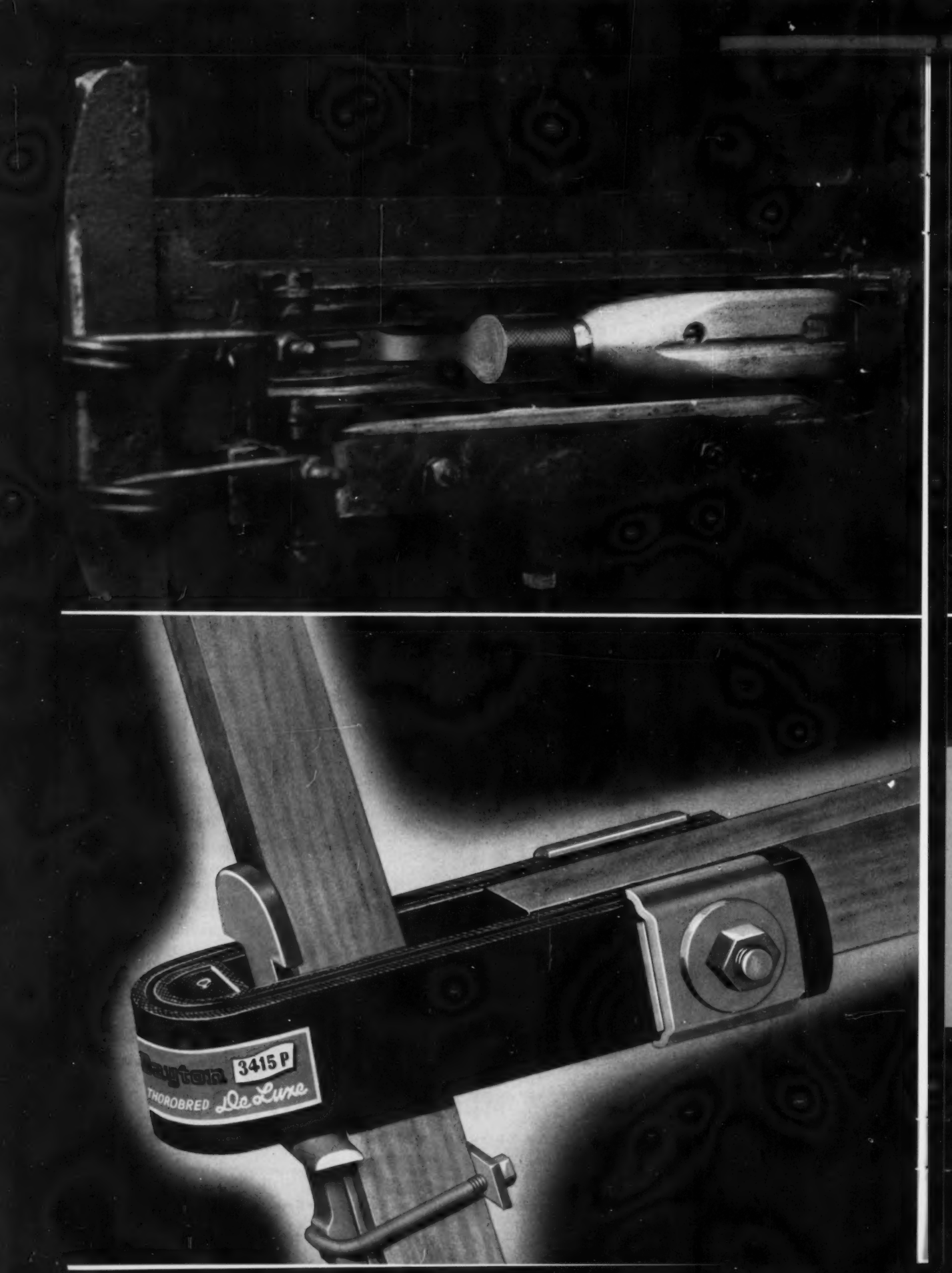
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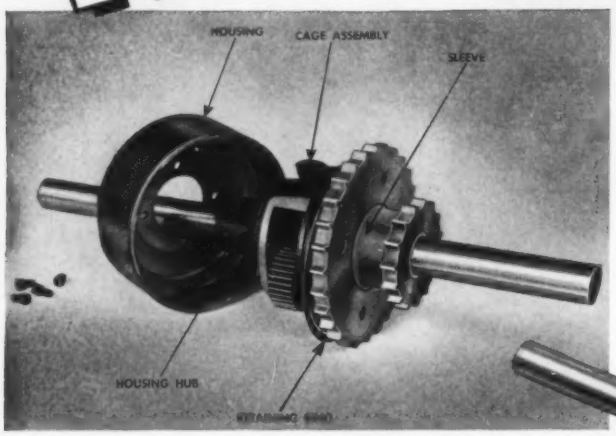

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Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

Setting slubber and spinning rolls for waste yarns

EDITOR TEXTILE INDUSTRIES:

In running waste stocks for years I have detected a sort of pattern in the running and break qualities of stocks obtained from one supplier to another. It is the lack of uniformity in such waste that breaks the back of management, spinners, and, of course, the spinning overseer.

Nonuniformity is made of little things not easily detected. For instance: Who in his right mind can expect the cotton grader to pull and classify the staple in a sample of card strips or comber noils with the ease and accuracy that the grader would sample 1 1/16″ cotton? Here is the source of the greatest of the difficulties confronting the waste mill.

A large waste mill must depend on card strips and comber noils from several mills; and each of them has different ideas as to the amount of waste to be extracted from the parent stock, the carding speeds, and otherwise the amount of "abuse" or the amount of care given a good bale of cotton. Those little things add up to one big headache to the processor of waste.

If a single source of waste could be utilized, the waste spinner would find he could fix his roll settings and his running speeds just as does the processor of good stock. Since that is not the condition now enjoyed by waste processors, the average one must have a trick or two up his sleeve that the usual operator does not need.

One of the tricks he must use is in the setting of the slubber rolls. Normally the processor of good stock can abide by the settings given him by the machinery manufacturer for the distance between the back slubber roll and the roll next to it. The processor of waste may be forced to throw such settings out the window.

Since a great amount of the waste now processed is done on the conventional three-roll units, we shall adopt that system for the discussion of the moment.

The card strips from 1″ stock are composed of a cross section only remotely resembling that of the parent stock. In the original stock, 20% (more or less) of the fibers will fall into the range above the figure adopted by the classers as the "average" staple length. The second and third roll settings on a three-roll system given by the manufacturer will accommodate those fibers of extra length.

The cross section of fibers left in the strips from 1″ cotton is more likely to have that 20% figure moved downhill until the "average" length will be more akin to 7/8″. Where does that leave the carder or spinner who must get that short stock through his department in an acceptable form?

The mention made of the conventional three-roll system was not a slip in the type. Waste yarns

NEW KINK CONTEST!

$100 will be awarded the winner

Send your entry now! This contest ends December 15, 1956

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

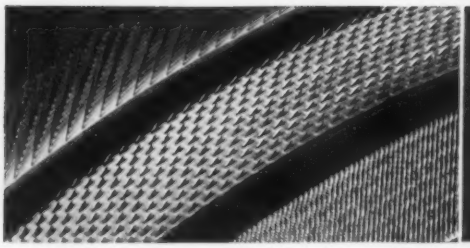
► All contributions must be postmarked not later than midnight, December 15, 1956.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E. Atlanta 8, Georgia.



Ashworth Tips ON CARDING

No. 33 in a Series

RECLOTHING WOOLEN CARDS

Prior to reclothing a woolen card, where a metallic breast is part of the equipment, it is important that the latter unit be examined for damaged wire, etc. Corrective maintenance is essential to good carding and definitely increases the life of the clothing, especially in the breaker section of the card.

Strippers should be instructed to clean clogged gears, chains, etc., and to remove all excessive fly which has accumulated. Check the level and alignment of the card, look for worn bearings, gears, shafts out of true, broken parts, etc., repairing or replacing whenever necessary.

After taking off old card clothing, the surface of the roll to be reclothed should be cleaned of all dirt, grease, paint and rust, etc. All oil soaked, loose or low plugs should be removed and replaced with new plugs of correct size and taper. Finish new plugs even with cast-iron surface. Care should be taken, when sawing plugs, not to saw into surface of roll. Drive shoe pegs into old tack holes in usable plugs. All rolls which are out of round should be surface ground true, to save undue grinding of card clothing and to assure good settings and quality work.

Card clothing should be stored in a warm, dry place until ready for use and should not be applied unless preconditioned to card room temperature. Great care should be exercised in removing card clothing from the reel case. Pull clothing straight out from the box. Otherwise considerable damage may be done to the outside edge of the fillet or the wire itself.

Clothing machines with associated power drives should be maintained in good physical condition. Step cone pulleys and tension box surfaces should be smooth and even. Tension scale should be recalibrated when necessary. Proper application of card clothing is a determining factor in the life of the clothing and the production of quality roving.

When putting on new clothing it is poor practice to have a twist between the roll being clothed and the tension device. This twist has a tendency to distort the wire and puts additional strain on the selvages of the clothing. As the fillet is wound on the roll, it should be constantly rubbed up to assure all wires being firmly seated in the foundation. Each wrap should be packed-up firmly against each preceding wrap, so as to avoid leaving a space between them. Packing too tightly results in "cupped" fillets. If a packing hammer is used, care should be taken to hit only the selvages of the fillet and not the wire. Do not drive tacks into foundation of clothing too hard and avoid tacking too close to the selvage. Such practice may weaken the fillet so that it will break, if subjected to an unusual strain.

Use the proper tension for the type of clothing to be put on. Too much tension can cause distortion of the wires, too little tension may cause a creeping and consequent buckling of the fillet resulting in a smash. Suggested tension for a four ply flexifort cylinder is 350 to 400 lbs.; for a doffer 250 to 300 lbs., depending on the particular carding operation.

New card clothing, after proper application, requires only a light grinding for a short interval of time in order to obtain a true and even surface. Grinding equipment must be in good condition with new emery of correct grade.

The right kind of clothing, correctly installed, ground and maintained, should have extended life and make its contribution to quality carding.

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American Card Clothing Co. (Woolen Division)

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E. G. Paules, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • 6 REPAIR SHOPS • 7 DISTRIBUTING POINTS

usually are coarse yarns which need no long drafting units for economical processing. Long drafts are not compatible with good running waste yarns anyway.

For the beginner in the running of waste yarns it is suggested that a trial frame be set up for finding the best combination of steel roll settings. Once the frame has been chosen and the creel of drawing sliver is in place, my routine would be as follows:

Pull a sample of the sliver to determine the amount and length of the longest fibers present. Set the first and second steel rolls just to clear the long staple. Now set the second and third rolls ½" wider than the setting given the first and second rolls. That setting works quite well for me.

The top rolls should be set slightly forward of the center line drawn through the center of the bottom roll and perpendicular to the plane of the steel rolls. The degree of listing forward of the front of the center line will be limited by factors known to all mill men and which do not need to be discussed here. The list of the top rolls is the secret to good running work.

Two hours are required for one fixer to set the steel rolls on a slubber. The figure will vary of course from mill to mill; but it is a needless operation in waste processing, once the setting listed above is accomplished. So leave those steel rolls alone.

Once the first few yards of roving are run, inspect it for lumpiness. Usually, if the system is followed closely, the roving will be smooth.

But lumpiness, should it be present, can be corrected by changing the top roll setting. If there are signs of lumping, move the top front roll backward. This has the effect of closing the steel rolls slightly.

If the top front roll cannot be moved far enough to offset the lumping, move the second top roll toward the front. The two rolls can be varied enough to effect approximately 1/16" change in roll setting without upsetting the running of the work. It can be done in a very short time (compared to steel roll setting), and probably will be required each time the source of the waste is changed (from mill to mill).

Cockling is the result of rolls being too close. This is corrected by working in the reverse of the steps above. Don't, under any circumstance, expect the finished roving to look, feel, or be like the roving from good cotton. However, it is possible to approximate such.

In spinning from the roving made of waste, it is best to have adjustable cap bars which can be closed to a point which would appear ridiculous under normal operations. Leave out all the twist in the roving that can possibly be omitted. This again may attain ridiculous proportions; it also will probably require changing as the waste source is changed.

A rule of thumb is to put in enough twist to cause hard ends to appear in the spinning; then back out enough twist to allow the hard ends to disappear. Most of the twist should disappear in the draft zone between the receiving roll and its running mate.

Do not anticipate running the spindles at top speeds. If all else fails to keep those ends up, cut the spindle speeds. Here again, do not expect the running quality or appearance associated with good cotton.

CONTRIBUTOR No. 8901

HOW OTHER MEN MANAGE

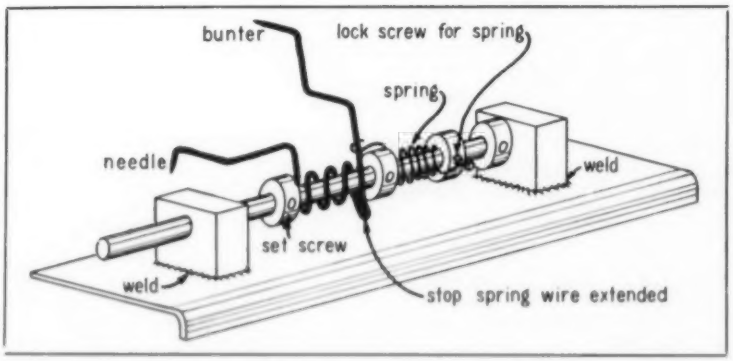
Crow-hop requires temple cap change only

EDITOR TEXTILE INDUSTRIES:

After a couple of afternoons of experimenting I came up with the crow-hop described here. We were running a 61" glass fabric, 150/4/2 Fiberglas warp and filling, on a loom of 63" reed space, and did not have room for the conventional crow-hop on either side of the cloth. A press roll in front of the sand roll left no room behind the temples for fastening anything.

This crow-hop has many advantages over the conventional ones: one is that only the temple cap has to be changed. Another is that the needle and bunter are in one plane. It is also adjustable lengthwise.

The needle cannot come loose and go through the reed, it can be



lifted so that the needle is in a horizontal position when the lay is at front center. For fine work it could, if necessary, have an adjustment for depth of needle through the eyes.

The device is made as follows: Weld two pieces of ¼" x ¼" x ½" key steel to the temple cap (one piece ¾" from the back end, and one piece 5/16" from the front end). Bore a 5/32" hole

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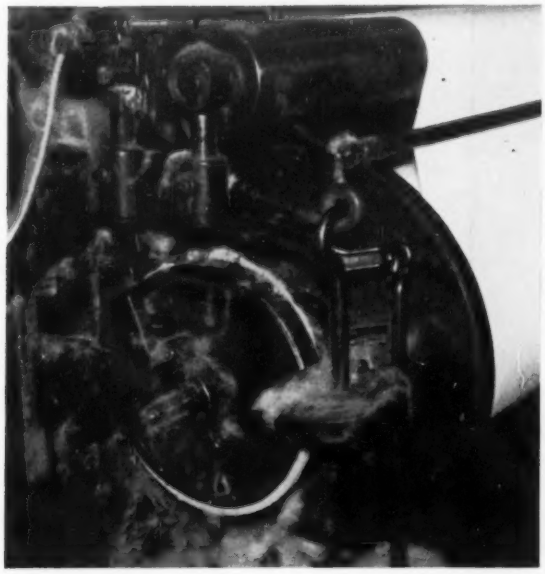
*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

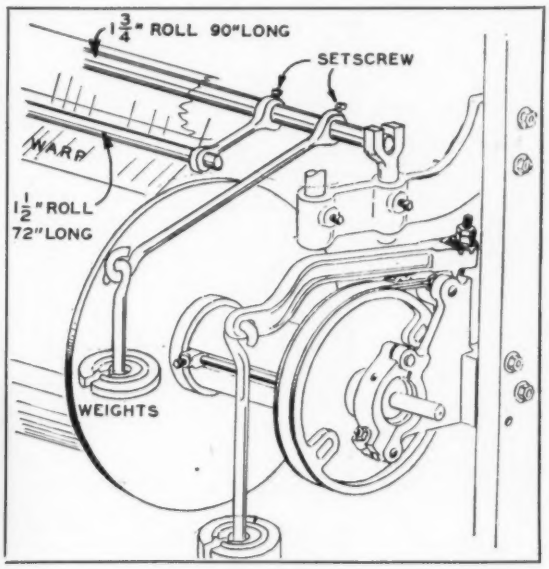
Ideal Industries, Inc.
Bessemer City, N. C.

through the two pieces of key steel near the top of the pieces to receive a single length of spring steel wire through the two. Prepare four half-inch collars, drilled and tapped for 3/16" Allen head set screws. Two of the collars act as stops and fasteners for the springs needed to pull the crow-hop down. The other two are used to position the needle. The needle and bunter combination is made of 3/16" steel wire.

CONTRIBUTOR No. 8904

No set marks with this preventer





EDITOR TEXTILE INDUSTRIES:

We devised the kink described here to help our weavers start up a loom (after picking out) without putting start marks in the cloth.

The beams on our W-3 looms are heavy and unhandy for the weaver to pull back. Also, any wear in the take-up train permits several picks to be inserted (after picking out) before the cloth begins to move. The unit we built costs very little and so far has been absolutely foolproof.

As the illustration shows, we ran two rods across the loom, one in front of the whip roll resting on the warp, the other underneath the warp ends and resting in the second whip roll bracket. This acts as a holder for two arms which run out and are attached to the front rod.

Two other arms are also attached to the inner rod. These run out close to the edge of frame and are turned at the ends to hold a weight lever and weights. With this assembly the cloth can be let back without turning the beam back.

The rods take up the slack and hold it until the loom has woven enough to use up the slack and start drawing from the warp. There are no start marks at the point where the slack disappears and where the beam begins to let off again.

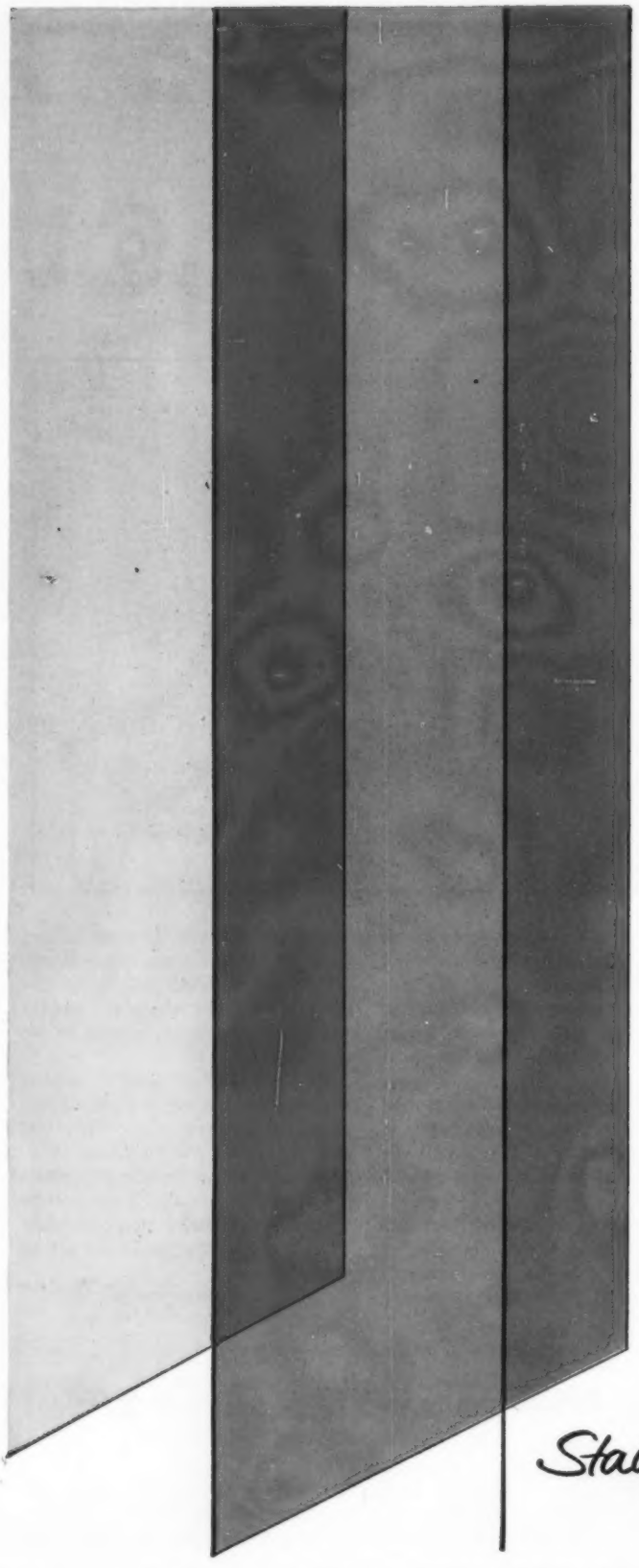
The amount of weight needed will depend on the weight of the goods being woven. Our cloth construction calls for 38 picks of 4/2 spun, and two picks of light metallic yarn. The metallic yarn breaks quite a lot and our weavers have to pick out a few picks to get to the pattern.

CONTRIBUTOR No. 8894

What factors give uneven fabric widths in finishing?

EDITOR TEXTILE INDUSTRIES:

Twice in my career I have encountered a problem of uneven width on cotton goods being Sanforized, mercerized, or resin treated. In one instance I traced the trouble back to improper removal of caustic during the mercerizing process. In the other case



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I found a faulty chain drive which caused excessive tension during the drying process. When dried under the excessive tension, the goods came out a little on the narrow side.

In general I view shrinkage in cotton goods during finishing as being caused by mechanical or chemical (sometimes, in a loose sense, a combination of these two) conditions. It is generally agreed that woven cotton goods have a high warp shrinkage or "relaxation;" however, bleaching department operations cause a "gain" or "stretch" warpwise that sometimes goes as high as 10%. The amount of gain depends, of course on the fabric and the equipment used in the bleaching process.

Fabrics that are mercerized properly are dimensionally stable when Sanforized or resin treated. However, finished width is under the grey width.

Several years ago I started a study of gain and shrinkage, and, as my duties permit, I still pursue the subject. There are many things I should like to know which I can best learn from other finishers in the field who are willing to discuss the subject with me. Perhaps if you publish this letter in some form, I can get a few replies from people who want to exchange some ideas.

CONTRIBUTOR No. 8900

● *Will someone join this contributor in discussing gain and shrinkage, as well as finishing in general?—The Editors.*

HOW OTHER MEN MANAGE

Bicycle sweeper

EDITOR TEXTILE INDUSTRIES:

In a small mill or warehouse where a vacuum cleaning track is not economical, and hand cleaning is troublesome, this bicycle sweeper will save much time. Simply attach the broom behind the bicycle or to the sides in front. Weight to

hold the broom(s) to the floor, and run across the warehouse aisle, mill aisle, or wherever you wish to sweep. A box may be mounted at the luggage rack position to hold waste or sweepings. A similar type of sweeper is in use here

CONTRIBUTOR No. 8899 (*Japan*)

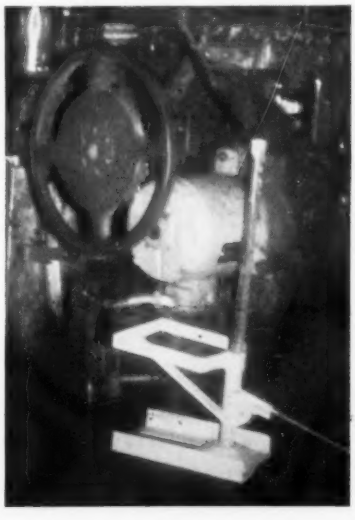
Auto jack makes lift for mounting motors

EDITOR TEXTILE INDUSTRIES:

I am sending you a kink which is very useful to me, and I should like to pass it on in case others can use it. It is a jack for use in motor changing.

Material needed: single post automobile bumper jack, ¼" x 1" x 36" flat iron, and two pieces of angle iron ¼" x 2" x 12".

Weld the post of the jack securely to the base and cut from the jack the hook that goes under the bumper of the automobile. Now bend the flat iron in a rectangular shape so as to have about eight inches on the side in front of the jack.



Weld the bent ends together on the opposite side of the rectangle, where the hook has been sawed off. Weld a brace, as shown in picture, from the bracket to the lowest part on the movable part of the jack.

Now weld the two pieces of angle iron on the bottom of the jack base so as to protrude under the bracket fastened to the jack for support.

This jack is ideal for mounting motors on looms or in changing motors, especially on Crompton & Knowles looms.

In order to change a motor, place the jack under the motor so as to let the lead wire box be in center of bracket and jack up until bracket is tight under the motor. Loosen the motor bolts, and then let jack down slowly. Motor may be moved around so as to miss the frame and hand wheel of the loom.

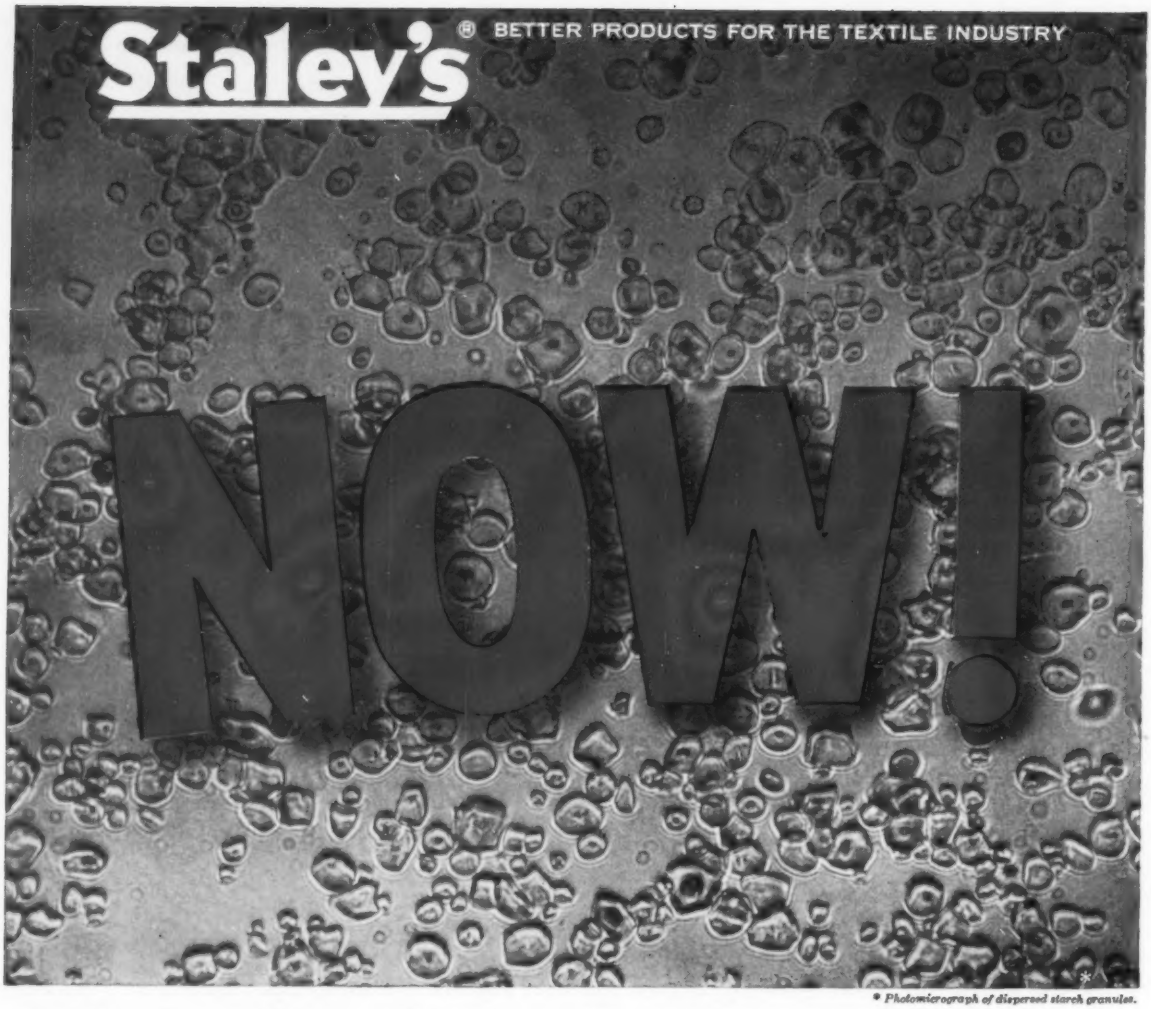
It is hard for one man to change these motors and there isn't room for two men to do the job, therefore the jack will do the lifting so one man can do the mounting.

CONTRIBUTOR No. 8896

Prevent cone sloughing

EDITOR TEXTILE INDUSTRIES:

There is one source of trouble in running rayon yarns on knitting machines which can be corrected easily. When the machine stops



* Photomicrograph of dispersed starch granules.

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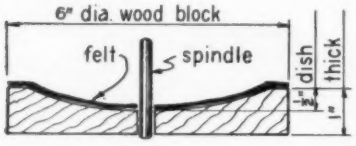
the slick yarn falls down and gets under the cone. Sometimes it takes 30 minutes to straighten up the mess caused by such slipping.

To correct for this trouble, use a circular block of wood on each yarn holder. The block should be six inches in diameter, one inch thick, with a hole bored through the center the size of the spindle on the yarn holder. Dish this block of wood out, starting from the outer edge of the board—dish it out to one-half inch in the center.



On top of this dished-out wood put a round piece of felt. Punch a hole in the center of the felt to correspond to the hole in the wood.

With this dished-out shape, and the felt on the block of wood, the cone of yarn adjusts itself as it runs off. When the machine stops, the yarn cannot fall below the cone. In this way the rayon runs good on any machine.

There have been many other ways tried. Some hit the cone bottom on something solid to knock the rayon down on the cone. This, however, takes time and sometimes damages the yarn.

CONTRIBUTOR No. 8903

Chewing gum repairs reed

EDITOR TEXTILE INDUSTRIES:

I do not usually approve of fixing looms with chewing gum and baling wire, but there are occasions where a hunk of chewing gum can get you out of a spot.

Often we will have a wire break near the top in a fine reed. To keep the loom going until warp-out, we take a well-chewed piece of chewing gum and pack it around six or so dents at the top of the reed, with the broken wire in the center. Let it harden for a few minutes before starting up the loom.

CONTRIBUTOR No. 8837

Corrects snowballing

HOW OTHER MEN MANAGE

The following suggestion on the control of "snowballs" at the card was submitted by an overseas contributor.

A carding expert in this country has voiced the opinion that the idea has merit. He is now in the process of testing it.

In the meantime the kink is being published with a minimum of editing. All words in brackets are the Editors'.

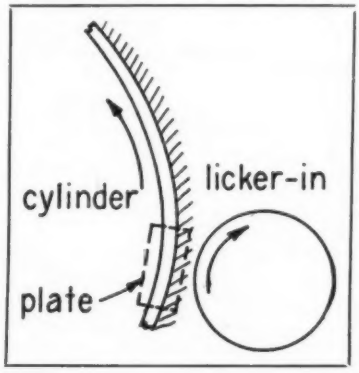
EDITOR TEXTILE INDUSTRIES:

Having read a lot about "snowballs" on the selvages of card webs, but [having] never found anybody to say where they originate and how to prevent them, I give here my explanation and cure:

Snowballs are due to cotton rolling between the cylinder vertical border and the framing.

Every time there is more than 10/1000" to 12/1000" between the vertical sides of the cylinder and the framing, the cotton leaks on the sides, entering from where the licker-in touches the cylinder.

To prevent this, put a metal plate about 4" long and a suitable



thickness on the inner side of the framing, starting 1" before the point where the cylinder and the licker-in meet each other.

In the card constructions where the card has at this point an adjustable piece, it is enough to readjust this piece until it nearly touches the cylinder edge.

Take for instance the 1895 Dobson and Barlow card. To close the space between the licker-in pedestal and the bend there is piece attached to the pedestal by a projection. In this case it will be enough to file a bit from the projection until the piece comes nearly in contact with the revolving side of the cylinder.

With other constructions where this space is closed by the bend itself it would not be advisable to push the bend toward the cylinder, because this would alter the settings of the flats and back plate. In this case it is necessary to fasten to the interior face of the bend a sheetiron [strip] of suitable thickness (5/1000" to 10/1000" generally). This is cut to the same radius as the cylinder, letting a clearance of maximum 10/1000" between the sheetiron and the revolving side of the cylinder. My personal experience was on Tweedales cards.

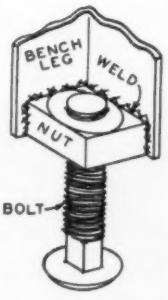
CONTRIBUTOR No. 8886 *(Italy)*

● *If you decide to try this, tell us what results you had. Letters published will be paid for at regular space rates.—The Editors.*

Bench leg height adjuster

EDITOR TEXTILE INDUSTRIES:

Here is a height adjuster which can be used for a number of leveling purposes. We have installed them on benches with metal legs by welding a nut to the bottom of the angle iron.



The bolt selected should have shoulders to expedite adjustment with a wrench. The round bolt head lends itself to skidding across the floor if necessary. The idea can be adapted to wooden legs.

CONTRIBUTOR No. 8891

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For further information use Handy Return Card, Page 229

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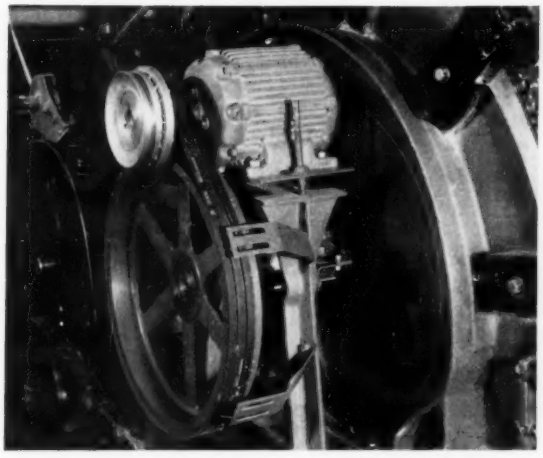
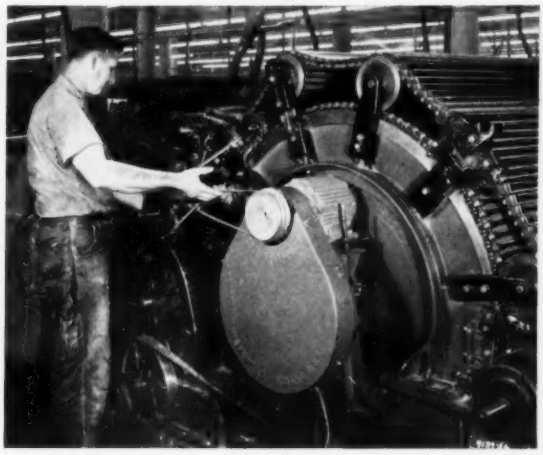
Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors





Cotton type card equipped with the Dodge Flexidyne drive. In left photo all components of the drive are visible since the aluminum protective cover is removed. Right photo, operative prepares to strip the card.

Dry fluid card drive gives soft, 30-second start

Now available as a package unit ready for installation on cotton type cards is a dry fluid type drive which gives a soft start to the card and accelerates the machine to full running speed within 30 seconds without excessive strain on either the motor or the card.

This drive protects against excessive current draw during the starting period, eliminates the need for expensive controls, and permits the use of a normal rather than a high-torque motor. It can also be run in reverse for stripping the card.

Called the Flexidyne Card Drive, it derives its name from the Flexidyne dry fluid drive unit (described in TEXTILE INDUSTRIES for November, 1955, p. 101) around which it is built. The "fluid" in the Flexidyne is heat treated steel shot. A measured amount, called the flow charge, is contained in the housing, which is keyed to the motor shaft. When the motor is started, centrifugal force throws the flow charge to the perimeter of the housing, packing it between the housing and the rotor which transmits power to the load. After a brief starting period of slippage between housing and rotor, the two become locked together and achieve full load speed, operating without slip and at 100% efficiency.

The complete package, which may be easily and quickly installed, consists of a Flexidyne (which is keyed to the motor shaft), a pedestal to support the motor on which the Flexidyne is mounted, a V-flat drive from the Flexidyne to the card shaft, a special aluminum stripper pulley mounted on the outer end of the Flexidyne housing, and an aluminum guard which covers the drive and V-belts.

Three grooves are cut in the driven hub of the Flexidyne for three A63 steel cable belts which transmit power to a straight-faced pulley mounted on the card shaft by means of a Taper-Lock bushing. The pedestal has an adjustable motor base for easy control of tension on the V-belts.

Dodge Mfg. Corp., Mishawaka, Ind.

Do you want more data? Write ◆ or use card on page 229; list J-101

New J-box offers improved bleaching, lower costs

Du Pont's newly designed J-box for new continuous peroxide bleaching systems or for modernization of existing equipment offers increased operating efficiency at lower over-all costs. With fewer moving parts and simplified construction, the J-box minimizes cloth distortion and abrasion. Up to 20% can be saved on construction costs.

Chances for mechanical damage have been greatly reduced because the cloth passes through the heater chamber in a relaxed state. A single draw roll lifts the cloth gently into the storage chamber where a simple plaiter piles it uniformly into the J-box.

A new heat chamber gives a 16-fold increase in available steam volume which materially improves cloth heating before piling in the J-box. This permits maximum operating temperature with a minimum of steam consumption.

A new steam distributor introduces regulated amounts of low-velocity conditioned steam into the J-box above the cloth storage level. The cloth is heated before piling and thus uniform heating of all weights and constructions

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of cotton fabric is insured.

Regulated steam flow is controlled in accordance with the demand of cloth being processed. An adequate supply of steam is provided under all operating conditions.

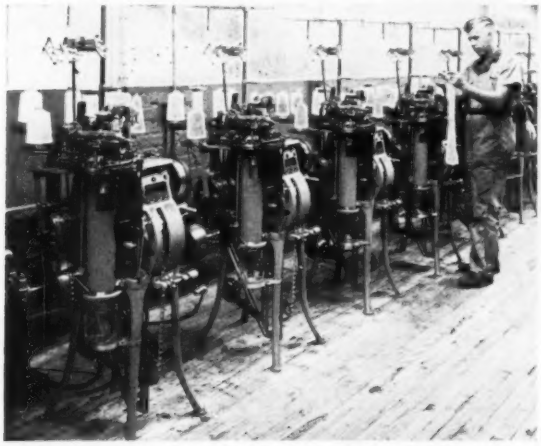
A list of manufacturers licensed to produce this equipment is available from

Electrochemicals Department, E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

Do you want more data? Write ◂ or use card on page 229; list J-102

Machine makes plain or mesh seamless hose

The Carolina Model K2FS seamless hosiery knitting machine is a two-feed, high cylinder, spiral type machine



capable of knitting plain or mesh fabric with conventional or stretch type yarns.

Equipped with demi-toe and Y-heel constructions, the machine has the usual electric stop motions and take-ups.

Carolina Knitting Machine Corp., 508 W. 5th St., Charlotte, N. C.

Do you want more data? Write ◂ or use card on page 229; list J-103

Draft roll cover bleeds static into steel roll

An anti-static roll covering that practically eliminates lapping caused by static is designed to meet the problems created by the growing use of synthetic yarns, the trend toward non-metallic cap bars, and the elimination of other metal-to-metal contacts in frames.

The anti-static roll cover features additives which permit the rapid flow of static electricity from the roll cover to the steel drive roll. It bleeds off 6 volts in 35 seconds.

The roll covers are made in all standard sizes and compositions for frames equipped with either flat or revolving clearers.

Armstrong Cork Co., Lancaster, Pa.

Do you want more data? Write ◂ or use card on page 229; list J-104

Handy loom oiler saves time and money

A recently developed loom oiling machine should soon pay for itself in mills with as many as 200 looms. Not only does it save time and enable the oiler to service more looms or perform other duties; but there is also less likelihood of failure to lubricate some loom bearings and cams because of frequent interruption of the oiling cycle to return to the lubricant supply point to refill oil cans. Thus, fewer repair parts are required.

Jenkins loom oiler.

Measuring only 18 inches high, 12 inches wide, and 20 inches long, the oiling machine weighs only 40 pounds and is constructed of heavy gauge steel with free-rolling casters. Consequently, pushing it down weave room alleys may be easily accomplished.

Principal components of the loom oiling machine, which operates by means of compressed air, are an oil tank with a capacity of five gallons and a compressed air tank designed for 15 psi pressure.

Maintenance required for the oiler is negligible since there are no moving parts.

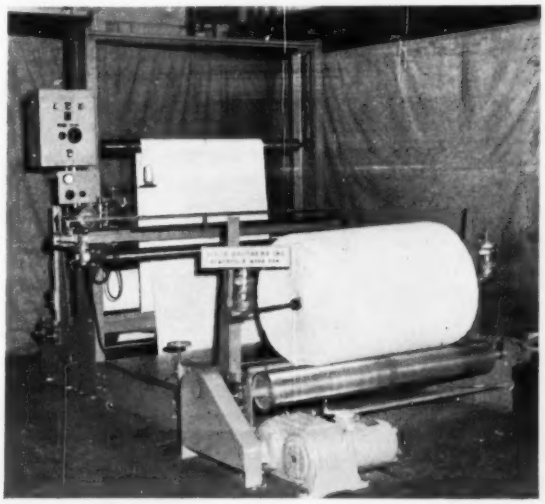
Jenkins Metal Shops, Inc., Gastonia, N. C.

Do you want more data? Write ◂ or use card on page 229; list J-105

Speed-up seam inspection at finishing

A new seam inspecting, sewing, and winding machine for the inspection of seams in large-diameter rolls of cloth, as received from the grey mill and delivered to the finishing plant, permits the rapid inspection (130 to 260 ypm) of seams to ascertain if they need re-sewing before processing.

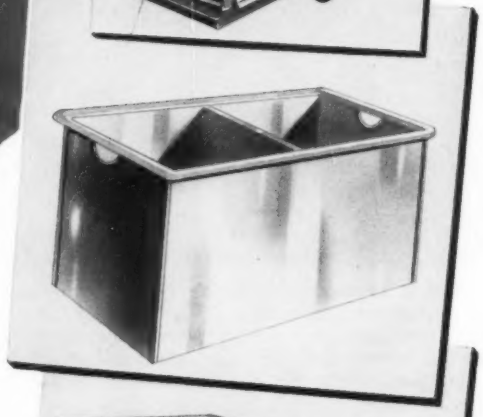
This machine makes it possible to eliminate poor seams and consequent breakage of the seams with expensive

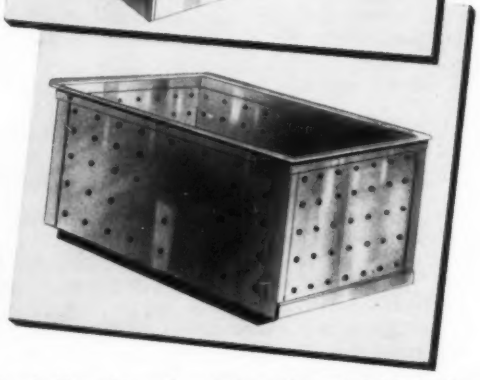


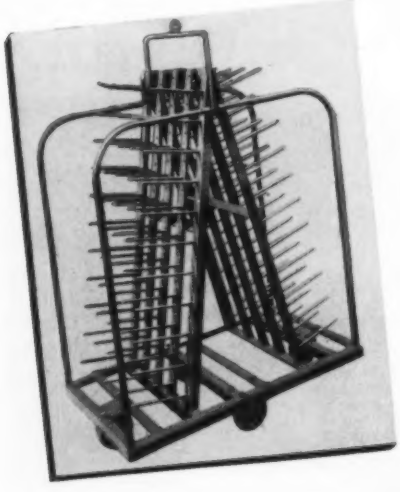
delays, as well as permitting the detection of crooked seams which might cause wrinkles or distortion of the fabric in the finishing operations.

A let-off unit equipped with magnetic brakes is followed by a pair of upright stands on which the guide

WHAT DO YOU NEED IN *Materials Handling*







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B. W. Lynch, Jr., Sales Mgr.

Georgia, Alabama, Mississippi, Texas, Tennessee: J. P. Goldwire

South Carolina: J. O. Goldwire

rolls, the automatic seam detector, the air-cushioned compensating roll, and the control panel are mounted. The seam detector is sufficiently sensitive so that the steam is automatically stopped just before it reaches the railway sewing machine, which is also mounted on the uprights. This quick stopping is accomplished by means of magnetic brakes.

The railway sewing machine is fitted with a Merrow butt-seam head, with an arrangement for multiplying the number of stitches at the selvages of the fabric. As an alternative, the chain stitch head may be used..

On the delivery end, the machine is fitted with the necessary guide rolls, adjustable tension, scrimp bar, yardage counter, and a two-roll batcher, which is equipped with magnetic brakes. The machine is driven by a variable-speed motor drive, through an automatic electric clutch of variable torque.

Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

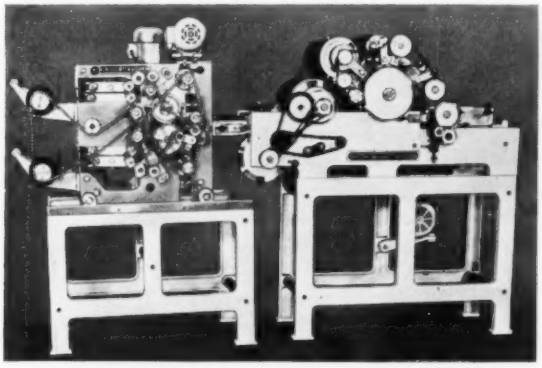
Do you want more data? Write ◂ or use card on page 229; list J-106

Wool card with tape condenser for running samples

Now available for running sample lots of wool, synthetics, and blends is a sample card with tape condenser manufactured by Anton Guillot K. G., Aachen.

Either fillet clothing or metallic clothing for the card may be specified by the customer.

The tape condenser is equipped with two motors and



a special drive for the rub aprons which permit regulating the speed of the rubber rub aprons from about 250 to 500 rpm.

With 18-mm tapes, two spools with seven ends each can be produced on the condenser; with 13-mm tapes, two spools with ten ends each.

Stellite American Corp., 60 East 42nd St., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 229; list J-107

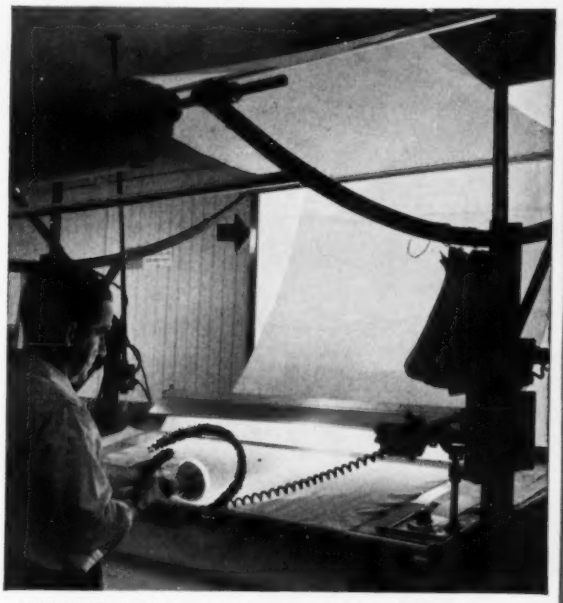
Make better yarn, cut costs with new spinning tape

Higher and more uniform spindle speed, improved quality of product, less power consumption, and longer life are advantages to be derived by using "Lan-Nyl-Bond" nylon spinning tape.

Made of 100 per cent spun nylon yarn, this tape is subjected to a special heat stabilizing and stretch treatment immediately after weaving, assuring uniformity and evenness of the finished tape and at the same time reducing the stretch and increasing the flexibility.

The resistance to abrasion provided by the nylon yarn

They proved it in Klopman Mills, Inc.— Asheboro, N. C.



FINAL INSPECTION—Portable directional General Electric PAR lamp insures detection of imperfections in finished cloth. A luminous panel in back of the fabric, lighted by nine G-E 40-watt fluorescents, bares even the smallest flaw.

HOW GENERAL ELECTRIC LAMPS HELP DETECT TROUBLES BEFORE THEY GET COSTLY!

AT KLOPMAN MILLS, INC. Asheboro, N. C., where delicate fabrics are created for women's and children's wearing apparel, a vital step in production is catching defects before they get costly. To help improve their inspection techniques, Klopman Mills took a close look at the lighting throughout the plant. Today, by the time fabrics reach the luminous panels of final inspection, shown above, they've spent much of their life under the revealing glow of specially selected lamps.

GENERAL ELECTRIC four-foot fluorescent lamps provide general inspection lighting—and G-E PAR-38 lamps provide grazing light so inspectors can quickly detect broken fibers. The PAR-38's are also used in sizing, grading and final inspection. These are critical seeing jobs where small variations in thickness or twist of yarn, or a broken thread, can ruin an entire run of fabric. The lighting techniques used at Klopman Mills, Inc. assure their customers that quality control is the best guarantee of a quality fabric. It may pay you to take a closer look at your lighting, too. Call your local General Electric distributor for the right answers to your lighting questions. General Electric Large Lamp Dept., Nela Park, Cleveland 12, Ohio.

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Controls Width
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MOUNT HOPE MACHINERY COMPANY

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Southern Repair Shop, Charlotte, N. C.

together with the advantages of the bonded joint insure a working life for this tape of at least three times that of the ordinary tape. It increases the average spindle speed by as much as 3.2 per cent. Variations in spindle speed are, on an average, reduced by as much as 80 per cent. Tests show that from 7 to 20 per cent of the total power consumed is saved by conversion to use of this tape.

This tape is made endless by a special bonding process which makes use of the thermoplastic properties of nylon. The polymer bond is approximately three times as strong as the tape itself. Also, the bonding process causes no distortion of the tape ends being joined. This insures smoothness in running.

Available for making the bonded joints is the easily operated Landis Nylon Tape Bonding Machine. With this machine thorough bonding is assured, and protection for the operator is provided.

Some of the features of the machine are: high heat input; indicating thermometer on top platen so operator can check to see that temperature is correct at any time; platens electrically wired so that it is impossible for one platen to heat unless the other is also heating; large platens have enough mass to hold heat so that machine can be operated for several minutes after it is unplugged from the 110-120-volt a-c power source; platens coated with Teflon to prevent sticking.

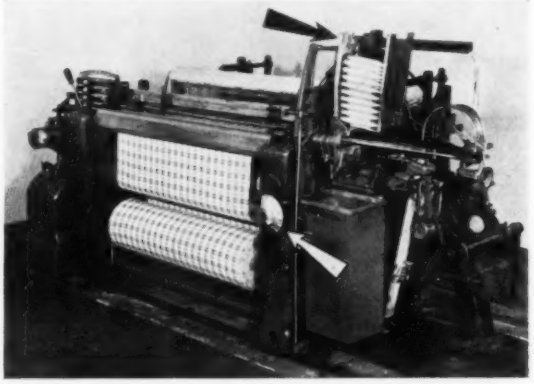
Oliver D. Landis, Inc., 718 Queens Rd., Charlotte 7, N. C.

Do you want more data? Write ◂ or use card on page 229; list J-108

Interesting new developments for looms

Several innovations are included in looms built by Adolph Saurer of Switzerland:

1. Stationary filling magazine with vertical bobbin grooves. Recommended for mills weaving fabrics with irregular color repeats from coarse yarns is this device



Black arrow points to stationary filling magazine; white arrow to spur wheel regulator.

which holds 25 bobbins each in grooves 1 and 4, and 15 bobbins each in grooves 2 and 3. The bobbin is positively guided during the transfer. A device prevents the hanging down of filling threads and their being pinched off by the shuttle.

2. Electronic-optical filling feeler. Of simple construction is this device which indicates the necessity for transfer by beaming light rays against the bobbins — the rays are beamed and the reflections received at the same point. A reflecting device on the bobbin barrel is kept

hidden by the yarn until the filling runs down to a predetermined level. Ray intensity is adjustable, and no slits in the box front are required.

3. Spur Wheel Regulator. Recommended especially for mills weaving fabrics with border design, such as blankets, towels etc., is this device which is fitted with spur wheels instead of worm wheel take-up. It makes easy the changing of the number of picks in a fabric—simply turn the dial: no gear changing required.

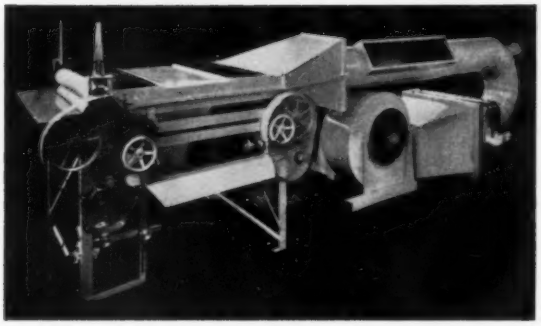
4. Automatic warp let-off motion with compensating back rest. Recommended for weaving light taffeta fabrics is this device which provides a positive let-off of the warp beam. It reduces considerably the number of warp breaks on these fabrics.

5. The parallel picking arrangement with fixed picker may now be fitted on the drop box side of the loom too. This device relieves the weaver of the constant worry about damaging oil stains caused by the picker sliding on the picker spindle.

Saentis, Inc., 2911 Summit Ave., Union City, N. J.

Do you want more data? Write ◂ or use card on page 229; list J-109

Dry tubular knit goods continuously at 15 ypm



A new tubular knit goods dryer, known as the Aero-Dyne Dryer, operates continuously in a horizontal plane and requires relatively little floor space (approximately 5′ x 16′).

This dryer will accommodate all types of fabrics, both plain and fancy, made of a wide variety of fibers including cotton, wool, synthetics, and blends. Speeds of up to 15 ypm have been obtained, along with the elimination of all types of stick and crow's feet marks. The fabric is delivered in either a roll or flat folded.

Tests made have shown that by drying to desired width, the handle, appearance, and shrinkage control have all been improved considerably.

The fabric is fed in at one end in rope form as from an extractor. It is dried by passing hot air over and through it in a series of opening discs and spreading arrangement whereby the dry width can be set to facilitate calendering and give best results with characteristics desired in subsequent operations.

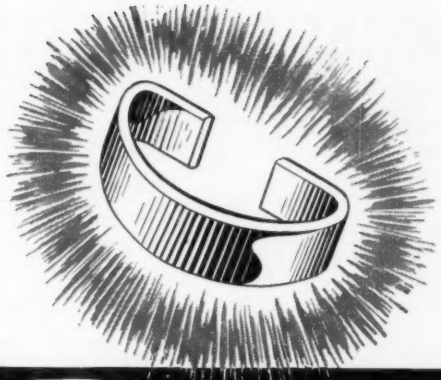
Joseph Pernick Co., Inc., Maspeth, L. I., N. Y.

Do you want more data? Write ◂ or use card on page 229; list J-110

1000 lb per hr from 1 hp Homogenizer

The Jet/Mogenizer will produce approximately 1000 lb per hour of semi-pastes or other viscose materials having viscosities up to 30,000 cps.

The rotor-stator clearance is adjustable through vernier



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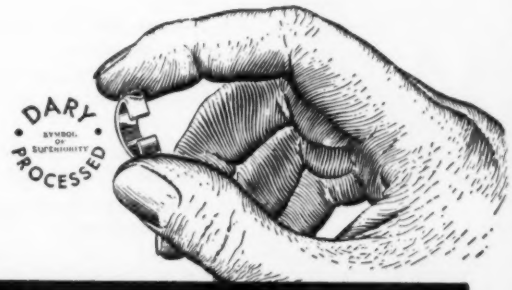

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CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S.C.

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- **Magnetic Design** Steady readings accurate to ±0.5% at any part of any scale.
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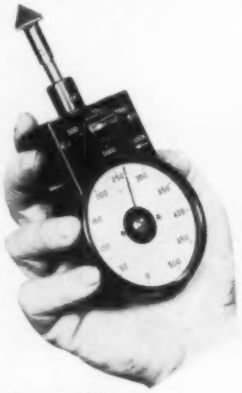

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- **Speeds up checking two to three times**
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type controls to adapt it to various types of fluids. Some mixing times are reduced as much as 80% with the assurance that every particle of a wet/dry formulation will be completely dispersed.

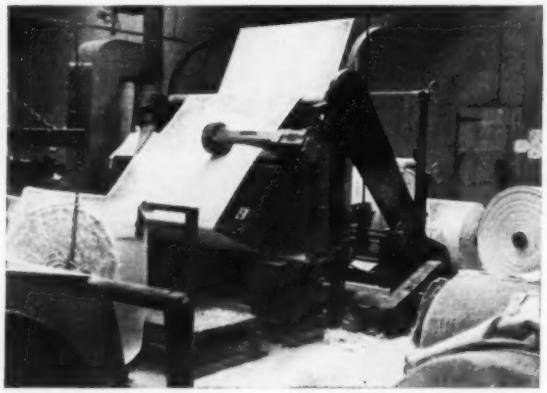
It lends itself particularly to continuous operations. Dispersions are stable. Cooking operations for some gums and starches can be completely omitted by a single pass of the wet/dry mix through the homogenizer. Undissolved lumps are completely eliminated.

Buschman Products Inc., 369 Lexington Ave., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 229; list J-111

New cloth inspection equipment

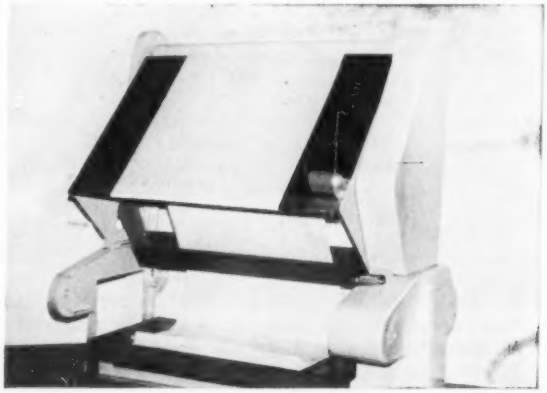
For examining, measuring, and batching heavy fabrics up to 80 inches wide, the Durrant Heavy Duty Batcher and Inspection Machine pictured below is available.



Shown in this photo is the composite machine, complete with brushing apparatus and dust extraction unit.

The machine produces a neat roll of goods and can be supplied complete as shown here or without the brushing apparatus and dust extraction unit as desired.

For inspection of silk and rayon fabrics, the Durrant Comet Mark II Inspection Machine was developed. Pictured here is a front view of the machine, with the fabric passing over the inspection table and being folded on a table underneath the frame.



The Durrant automatic guider will accurately guide fabrics varying in weight and texture from fine silks to heavy sailcloth, dry or wet from rough lap or batch.

Operation of the unit is entirely automatic, requiring no compressed air, electricity, or other source or power. Mechanism is totally enclosed to provide protection from

dust and moisture to insure efficient operation.

Ball bearings are utilized throughout the machine to insure light and free running so that the most delicate fabric is not distorted or the weft disturbed.

R. J. Dealy & Sons, 263 Summer St., Boston 10, Mass.

Do you want more data? Write ◂ or use card on page 229; list J-112

Oil-resistant wool card condenser tape

"Supr-O-Tape" is now available with Hy-Car coating, in addition to the regular neoprene. The Hy-Car coating will be useful where oil or emulsions present a problem, because this coating is oil-resistant.

Like the neoprene-coated tape, it offers these advantages: long life, non-stretch, maintains square edges and full width, no need to oil.

Benjamin Booth Co., Allegheny Ave., and Janney St., Philadelphia 34, Pa.

Do you want more data? Write ◂ or use card on page 229; list J-113

Get clean stretch yarn with little maintenance

A false-twist type machine (made in 64-spindle units) for the continuous production of stretch yarns from nylon, Orlon, etc., employs no belts, pulleys, or motorized spindles.

One operator can tend as many as 4000 spindles. The rate of production is three pounds per spindle per week, based on 70 denier, 34-filament nylon. The machine will accommodate yarns ranging in size from 20 denier to 300 denier and spun yarns in the form of singles.

The spindles are driven at speeds up to 50,000 rpm by a drive consisting of a flywheel mounted on an 1800 rpm, fractional hp motor. Each flywheel drives four spindles through a rubber tire molded on the spindle itself.

Each take-up, in the form of a three-pound pineapple package, is individually tapering and permits a new package to be started at any time. The heating element is readily accessible for threading and cleaning and is designed so that there can be no variation in temperature from one element to the next.

Valco Machine Co., 109 Thirty-Fifth St., Union City, N. J.

Do you want more data? Write ◂ or use card on page 229; list J-114

Sensitive and quick-acting humidity controller

The new Humistat Electronic Humidity Controller has been developed for accurately controlling atomizers in weave, card, and spinning rooms to precisely maintain preset relative humidity conditions.

It provides sensitivity of plus-minus 1.25% RH and response time of three seconds. In addition, the Humistat does not require repeated calibration.

Operating on 115 volts a-c, the switch action of the Humistat opens and closes small solenoid air valves, which in turn operate the larger diaphragm valves that supply air to the atomizers. Measuring only 3" x 4" x 6½", the instrument is easily installed and may be quickly and accurately adjusted by semi-skilled personnel to control points between 3% and 98% RH.

The Ellison Co., 1233 Healey Bldg., Atlanta 3, Ga.

Do you want more data? Write ◂ or use card on page 229; list J-120

The GESSNER Napping Panel *tells you EXACTLY what's going on*

Gessner builds Hi-Torc Nappers as single machines or in tandem. In tandem, these nappers will nap the same side of the cloth, or both sides at the same time. And in tandem, for the first time, the operator knows exactly the napping effect of the second machine simply by watching the panel. The napping performance is indicated accurately and constantly on the panel dials.

Gessner has made possible the control of the cloth tension and the napping effect of both machines from this one panel. No longer do you have to worry about tightness or slackness of the cloth on the rear machine.

The napping effect, once requiring multiple runs on a single machine, can now be produced in ONE Hi-Torc tandem run.

The Hi-Torc Napper has the necessary horsepower to drive both the pile and counterpile rolls on the breaking runs. That's why Hi-Torc cuts down the number of runs — saves you napping time and considerable money.

Simply tell us you would like to see a Hi-Torc Napper in operation. We'll do the rest.

DAVID GESSNER CO.

WORCESTER, MASS.

Canadian Representative: W. J. Westaway, Montreal, Quebec, Hamilton, Ont.

Gessner takes the guesswork out of napping

Panalarm Annunciator Systems Pinpoint Trouble on Process Operations and Automatic Machinery

Panalarm Annunciators are modern working tools used by management concerned with top output from a process or an automatic or semi-automatic machine. They give the operator control over his equipment, enabling him to produce more and better products at a greatly reduced reject rate.

Panalarm Annunciators are coordinated, multiple-unit signal systems that instantly alert the operator to off-normal process conditions at predetermined control points. The signals are both visual (illuminated windows or bullseyes) and audible (horns, bells, etc.). The Panalarm circuit is actuated by the closing or opening of any type of remote switch.

The system is modular, and it is completely flexible in operation and easily modified for future needs. Heavy duty construction to instrument standards throughout. Completely prewired, simple to install. Panalarm systems are engineered to your specific requirements.

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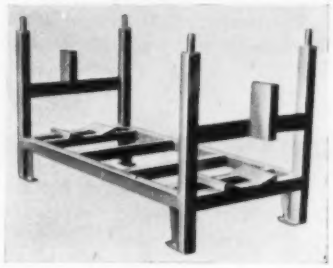
Beam storage racks made to order

Mills needing racks for storing section and looms beams may now have them designed and manufactured to meet their particular requirements.



Made of steel, aluminum, or combinations of steel, wood, and aluminum, the racks may be of all-welded and rigid construction or bolted with knock-down features. The beam racks are delivered to the mill complete, including painting with colors of customer's choice.

Jenkins Metal Shops, Inc., Gastonia, N. C.

Do you want more data? Write ☁ or use card on page 229; list J-115

Infrared equipment for synthetic fiber analysis

The Perkin-Elmer Model 85 Infrared Microscope Attachment is an instrument which, when used in conjunction with a standard infrared spectrometer, allows

the recording of the characteristic absorption spectrum of individual textile fibers.

Using the principles of microscopy to pass infrared radiation through the fiber, this instrument can provide valuable information on many important properties which are difficult or impossible to study by other methods. For example, it may be used to study the effect of various finishes on fibers, the effect of aging, identifying unknown fibers, and product control.

The microscope does not interfere with the use of the spectrometer to which it is attached for standard macro use. Thus a microscope-equipped spectrometer provides a complete infrared laboratory for the study of individual fibers as well as other materials.

Three models of infrared spectrometers are available from this manufacturer: Model 12-C is a single beam, single pass instrument; Model 112 is a single beam, double pass monochromator instrument that has twice the resolving power of the Model 12-C and complete freedom from scattered radiation; Model 13-U is the equivalent of two instruments — a recording ultraviolet/visible/near infrared spectrophotometer and an infrared spectrophotometer which provides a precision double

beam, linear transmittance recording and single beam, direct intensity recording throughout the useful absorption spectral range.

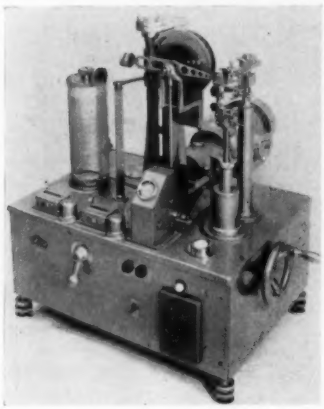
The Perkin-Elmer Corp., Norwalk, Conn.

Do you want more data? Write ◆ or use card on page 229; list J-116

Recording single-fiber strength tester

An instrument for testing and recording single-fiber strength, made by Karl Frank of Germany, is available through a supplier in the United States.

The instrument is especially designed for carrying out mass tests. Stress-strain diagrams are recorded at a constant rate of straining, and at the same time two counting devices add the values so that the mean values may immediately be read off when the test is finished. Thus, errors are avoided in the measurement of the elongation, etc., and time is saved as it is no longer necessary to evaluate the curves.



The forces are measured by a torsion balance. The apparatus is designed to work over a loading range of 0 to 20 g.

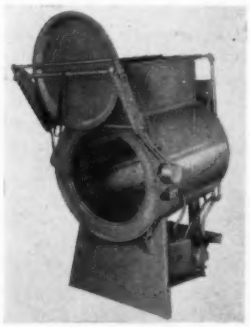
According to the adjusted speed of load application, the pointer needs 15 to 210 seconds to move from zero to the maximum value of the scale. The test length of the fiber is 10 mm and the minimum fiber length required for tensile tests without auxiliary devices is about 25 mm.

Testing Machines, Inc., 123 64th St., New York 23, N. Y.

Do you want more data? Write ◆ or use card on page 229; list J-117

Sock tumbler unloads itself automatically

Particularly adaptable to the tumbling operation ahead of boarding of bobby socks is a new laundry tumbler which automatically unloads itself in approximately 12 seconds. The compact machine has a 34" door to facilitate loading.



Useful for both conditioning and drying, it is available in both steam and gas-heated models. It has a 42" x 42" cylinder, with a capacity of 100 pounds dry weight.

The machine may be easily moved from one place to another and can be used in a battery installation in a minimum amount of floor space.

Huebsch Mfg. Co., 3775 N. Holten Ave., Milwaukee, Wis.

Do you want more data? Write ◆ or use card on page 229; list J-118

For EFFICIENCY and DURABILITY

Gastonia

PRECISION-BUILT PARTS

Get BETTER OPERATION and LONGER SERVICE with

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Card Screens

GASTONIA standard type rib or perforated Card Screens are cut and assembled on specially designed precision-built jigs.

Maximum operating efficiency and utmost durability of these Card Screens is assured by thorough checks at various stages of manufacture. Scientific final inspection guarantees setting points within standard tolerance.

GASTONIA Card Screens, like all other GASTONIA Products, are precision-built from the finest materials by highly skilled workmen having many years of practical experience.

Gastonia TEXTILE SHEET METAL WORKS, INC.
Gastonia, North Carolina

A sheet metal works serving textile mills

CYLINDERS — Dynamically balanced for better performance—reduce vibration to an absolute minimum.

SCREENS — Picker, Condenser and Waste Machine Screens of maximum strength and durability.

ASPIRATORS — Precision manufacturing methods assure proper shape and balance of Aspirators and Aspirator Dampers.

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SLIVER PANS
BACK TINS

COMBER REEDLING — Top Combs, Half Laps and Winder Guide Combs precision-rebuilt of top quality materials to manufacturer's standard specifications. Imported English needles of tempered high-tensile steel used exclusively.

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Industrial Textiles such as:

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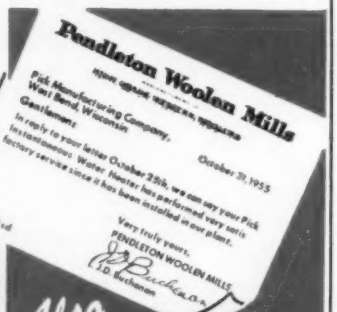
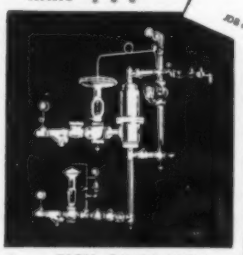
a very SATISFACTORY PERFORMANCE at Pendleton mills . . .





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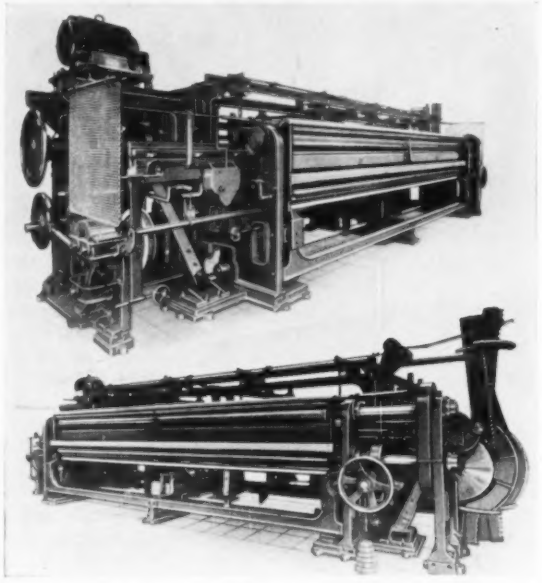
- Water is heated INSTANTLY by steam injection. Fuel savings are high because there is no waste — water is heated only as used.
- Pick Heaters maintain continuous flow at preset temperature for bleaching, dyeing, scouring, etc.
- Safe, Quiet Operation. Exclusive "Pressurizer Piston" assures maximum safety and eliminates hammer noise and vibration on continuous or "start and stop" loads.
- No storage tanks required. Can be installed in corners, on walls and overhead. Saves valuable floor space.
- Installation is simple and inexpensive . . . only ordinary pipe connections are required.

PICK MANUFACTURING CO. WEST BEND, WISCONSIN

Weave plain or Jacquard carpets 2½ times faster

Now available through an agent in the United States is a double shuttle, double piece carpet loom which is



built in widths ranging from 3 to 18 feet. Both plain and Jacquard pattern carpets may be produced on this machine at a rate that is about two and one-half times greater than the output obtainable from a Wilton wire loom.

With this loom, which is manufactured by Felix Tonnar in Germany, two carpets are woven simultaneously, one on top of the other, the same method utilized for velvet plush weaving. Two sheds are formed on this loom, and two shuttles run simultaneously, one in the top shed and one in the bottom.

Texma Import Co., 2226 E. Dauphin St., Philadelphia 25, Pa.

Do you want more data? Write ◂ or use card on page 229; list J-119

Equipment briefs

Vaneaxial fans designed for minimum turbulence. "Axiflow" fans for process air supply or air exhaust, designated Series 300, are engineered to give maximum air flow with minimum power input. Equipped with airfoil-type blading, the fans utilize aerodynamic principles on all guide vanes, inlet and outlet cones, wheel caps, and belt guards to minimize air flow turbulence. Available in three drive arrangements: External V-belt, direct drive with motor inside the casing, and direct drive with the motor outside the casing. There are 14 sizes of fans with volumes ranging from 1700 to 100,000 cfm, wheel diameters from 15" to 72", and static pressures up to 3¼".

Westinghouse Electric Corp., Sturtevant Div., Dept. 143, 200 Readville St., Boston 30, Mass.

Do you want more data? Write ◂ or use card on page 229; list J-201

Machine makes foam rubber. A simplified machine for making polyurethane foams can be easily set to produce either flexible or rigid foams with a wide range of properties. Components are placed in separate tanks above the top of the machine. Pumps driven by variable speed drives permit exact proportioning of the components

prior to entering the mixing head. The discharge at the mixing head may be mounted on extension lines for foamed-in-place operation.

Klauder Williams Co., Adams Ave. and Leiper St., Philadelphia, Pa.

Do you want more data? Write ◆ or use card on page 229; list J-202

Combination gas-oil burners. Industrial gas-oil burners which change from one fuel to another by means of a selector switch, or automatic controls if desired, are designed with integral air registers to eliminate the need of a costly checker floor. The oil burners operate on No. 6 oil or lighter, and have ratings running from 9 to 125 gallons per hour. The ring-type gas burners may be used with either natural or manufactured gas, and have a capacity range from 1,650,000 btu input per hour to 18,750,000 btu input per hour. Electronic combustion controls automatically shut down the burner in case some abnormal condition arises.

Iron Fireman Mfg. Co., Cleveland 11, Ohio.

Do you want more data? Write ◆ or use card on page 229; list J-203

400-denier Fortisan-36. Now available in the 400-denier size is Fortisan-36 yarn. Anticipated end uses include: home furnishings, apparel, and industrial applications such as vinyl-laminated fabrics, electrical core thread, mechanical rubber uses, cotton duck reinforcement, and sewing thread.

Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y.

Do you want more data? Write ◆ or use card on page 229; list J-204

Versatile bonding and sizing agents. Thermoplastic resinous base bonding and sizing agents, Tygobond 40, 41, and 45, are crystal clear, nonstaining, and have excellent properties for use as a size and as an adhesive for joining textiles, vinyl fabrics, and foams (to each other or to dissimilar rigid or nonrigid materials). The compounds are fast drying, air curing, and require contact pressure only to produce a strong, resilient bond that is resistant to water, acids, alkalis, oils, and certain solvents. They are available for spray, brush, or machine application.

U. S. Stoneware Co., Adhesives Division, Akron 9, Ohio.

Do you want more data? Write ◆ or use card on page 229; list J-205

Combination impregnator-laminator-coater. A machine for laminating, coating, or impregnating fabrics, glass mats, carpeting, etc., is available in widths from 12" to 72". Designated Model 55-1L-2, it is equipped with chrome-plated rolls, stainless steel impregnating tank, and variable speed drive. Good penetration is provided by the machine.

L. R. Wallace & Co., 191 N. Pasadena Ave., Pasadena 3, Calif.

Do you want more data? Write ◆ or use card on page 229; list J-206

Remote proportioning control system. A remote proportioning control system with a guaranteed accuracy of greater than 2% will telemeter such functions as pressure, flow, water level, pH factor, power, speed, etc., by controlling pilot proportioning operators and continuously monitoring the changes produced. The system can be installed by the average plant electrician, and it can be added to from time to time without extensive modifications. It may be used in conjunction with existing operators or can be supplied complete with reversing motors and pilot operators up to several horsepower.

Sparton Control Systems Div., The Sparks-Withington Co., Jackson, Mich.

Do you want more data? Write ◆ or use card on page 229; list J-207

Shamrock No. 19 Trucks with "Vyntex" Plastic-coated Duck Body.

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when you want
RUGGED WEAR
...LONG SERVICE!

... Says "MARK-O-MERIT"®

Look carefully at any Shamrock's sturdy construction. You'll see why many textile plants report longer years of wear, at low cost, from famous Shamrock products. Shamrocks are used the world over—and an extensive range of styles is designed for textile plant needs . . . for example, the Shamrock No. 19 "Vyntex" Truck shown at top. Also, special Shamrocks will be made-to-order for your particular needs. Contact nearest sales office or write direct. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 55 West 42nd St., PE 6-0615; ATLANTA — W. E. Petway, 2577 East Densley Dr., North Decatur, Ga., ME 6-3192; FORT WORTH — V. M. Hooton, 4220 Normandy Road, Tel. JEfferson 6-6564; WEST COAST — Petersen-Daniels, Inc., 3311 Beverly Blvd., Montebello, Calif., RAymond 3-7003. Export Mgr. — R. A. Auerbach, Easton, Pa. Cable Address: "Natly."

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Then, you'll be interested in DIAMOND FINISH Eadie Rings. Their automatic oil lubrication permits higher speeds with lower ends-down ratio: and the oil reservoir can be refilled while the frame is running.

WHITINSVILLE (MASS.) SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

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Tough? Absolutely!

EPI Patented Lock Ring* construction resists the tremendous crushing force of tenacious yarns. Designed for the long pull.

*U. S. Patent 2,625,343

Representatives:
J. H. Windle, Jr., 231 S. Main St., Providence, R. I.
R. P. Bennett, 333 Ridge St., Honesdale, Pa.

ENGINEERED *Plastics*
INCORPORATED
Gibsonville, North Carolina

Three new dyes. A range of dyestuffs called "Procion" will shortly be available to dyers in the United States. Manufactured by Imperial Chemical Industries Ltd., England, the first three dyes of the range offered will be a golden yellow, a brilliant red, and a bright blue. From the three dyes can be mixed a wide shade of colors. Especially suitable for high speed processes, the dyes combine chemically with cellulosic fibers by dyeing and printing methods to give good fastness.

Arnold Hoffman & Co., 55 Canal St., Providence 1, R. I.

Do you want more data? Write ◂ or use card on page 229; list J-208

Lightweight foot-lift pallet truck. Weighing only 200 lb, the Model HX hydraulic pallet lift truck handles loads up to one ton in close quarters. The 4½" lift is effected by a foot treadle, which is attached to the pull handle to operate from any angle.

Barret-Cravens Co., 628 Dundee Rd., Northbrook, Ill.

Do you want more data? Write ◂ or use card on page 229; list J-209

Molded case circuit breakers. Now available are molded case circuit breakers of 700-amp and 800-amp continuous circuit rating. These L frame breakers are manufactured in 2-pole and 3-pole designs for applications up to 600 volts a-c or 250 volts d-c. Also available are non-automatic 2-pole and 3-pole breakers with 800-amp ratings for use as circuit interrupters.

General Electric Co., Trumbull Components Dept., Plainville, Conn.

Do you want more data? Write ◂ or use card on page 229; list J-210

Double load lugs on 100-amp fuse puller switch. A 100-amp fuse puller switch, TC 37, suitable for use as service entrance equipment, is especially adaptable for rewiring jobs. In such applications, two sets of load lugs (rated 60 and 100 amps) permit the connection of two loads instead of one when the device is used as a main disconnect switch. Available in both flush and surface mounting, general or rain-tight enclosure; for 120/240 volts a-c single phase, three wire service, and for 125/250 volts d-c service.

General Electric Co., Trumbull Components Dept., Plainville, Conn.

Do you want more data? Write ◂ or use card on page 229; list J-211

Solvent type carrier for dyeing Dacron and blends. Clear colloidal solutions at application concentrations are formed by Tanavol. As a result, no high local concentrations can be present to lead to spotting. The carrier functions by forming a deposit on the fiber in which acetate dyestuffs dissolve. Then as the temperature increases, the dyes are transferred from the carrier into the fibers. It is not necessary to precipitate the carrier out of the solution, and it does not degrade acetate.

The Tanatex Corp., Belleville Turnpike, Kearney, N. J.

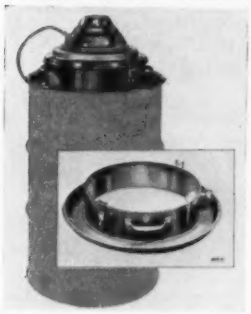
Do you want more data? Write ◂ or use card on page 229; list J-212

Remote alarm produces loud blast. An automatic remote alarm system, offering both audible and visible warning for abnormal process functions, produces a blast audible for more than 2500 feet. The system works over a 2-wire pair or single wire and ground return up to several miles. Any condition that will operate a switch or relay will trigger the alarm. Complete systems are available for high or low pressure, temperature and flow, electrical and physical load, and intrusion or position.

Sparton Control Systems Div., The Sparks-Withington Co., Jackson, Mich.

Do you want more data? Write ◂ or use card on page 229; list J-213

Make vacuum cleaner from 55-gallon drum. A conversion unit transforms any standard 55-gallon drum into a vacuum cleaner tank. The assembly, named the Clarke Giant Conversion Unit, offers the cleaning capacity of a large wet-dry vacuum cleaner at low cost. It consists of an air intake and exhaust unit powered by a 1 hp motor, inside filter bag, and conversion adapter cover which fits the drum.



Clarke Sanding Machine Co., Dept. PB, 30 E. Clay Ave., Muskegon, Mich.

Do you want more data? Write ◆ or use card on page 229; list J-214

Tank or pipe repairs without welding. A method of making repairs to metal tanks, pipes, and conduits, uses a filled epoxy resin (Sonite) and glass cloth. Corroded or broken out areas, split seams, breaks, and porous areas can be quickly and effectively repaired to handle gasoline, fuel oil, acids, alkalis, and other liquids and powdered materials. It has good chemical stability and stands heat up to 200 F. Available in white, Sonite P-2, and in aluminum, Sonite P-5.

Smooth-On Mfg. Co., Jersey City 4, N. J.

Do you want more data? Write ◆ or use card on page 229; list J-215

Portable tester for hydraulic systems. Efficiency can be checked and trouble spotted in hydraulic circuits by the Model PT-50-B circuit tester. The portable unit is connected by hose to the port to be tested, the load valve opened, and simultaneous readings of pressure, temperature, and flow taken as the fluid passes through the low pressure return line. The unit has a pressure range of 300 psi to 2000 psi; temperature range of 60 F to 220 F; and maximum flow of 50 gpm.

Schroeder Bros. Corp., 3116 Penn Ave., Pittsburgh 1, Pa.

Do you want more data? Write ◆ or use card on page 229; list J-216

Dye for wool, silk, and nylon. Lanasyn Red 2GL Pat. is a homogeneous, metallized dyestuff which dyes wool, silk, and nylon in bright yellowish red shades. Fast to light and milling, it dyes level even on tippy wool. Suitable for Vigoureux printing.

Sandoz Chemical Works, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write ◆ or use card on page 229; list J-217

New silicone emulsion. Readily soluble in all proportions, hydroscopic, Silver Lube RLS might be called a "slurry" of microcrystalline (particle sizes under five microns) waxes and silicone fluid. Lubricity is further enhanced by its compatibility with all water-soluble sizes, resins, and gums. It has neutral pH and excellent stability to cold water solutions. Non-permanent, it can be removed readily with a warm soap solution. Bath stability is not broken by either high or low pH.

Carolina Aniline Extract Co., Charlotte 1, N. C.

Do you want more data? Write ◆ or use card on page 229; list J-218

Flexible pipe for electrical conduit or for liquids. Known as "Plica," a flexible tubing can be used as a conduit for electrical wiring or for carrying noncorrosive liquids. It is now being made and sold in the United States under Swiss license. Made of either brass, copper, aluminum, asbestos, paper, steel, or combinations

Sims
SHIRLEY HOODS
will pay for themselves

There's no reason to use horse-and-buggy hoods when the jet age Sims Shirley Hoods are available. Here are hoods which conserve heat for drying slash warps instead of dissipating it in the room.

The result is a 10 percent to 20 percent increase in production . . . which is why we say Sims Shirley Hoods will pay for themselves.

Made of stainless steel for long life . . . self-cleaning inside . . . equipped with our patented drip buckets that prevent condensate from dripping on cylinder and warp.

Shirley Hoods in the slasher room eliminate condensation on the ceiling in winter and keep temperatures down in summer.

for ECONOMY and QUALITY

Our modern and progressive metal-working shops, our skilled craftsmen, our know-how—these are guarantees of quality.

For custom tailoring of stainless steel, call, wire or write now.

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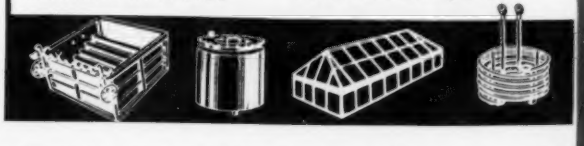
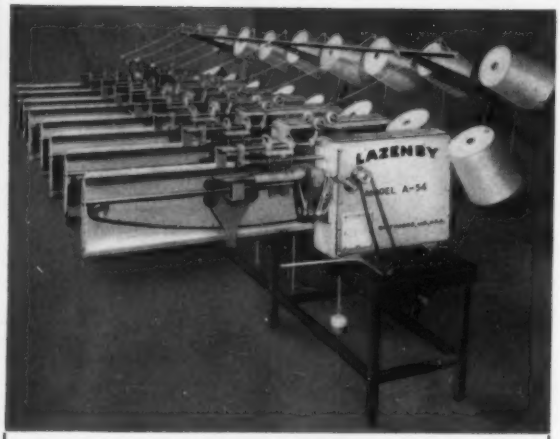
METAL WORKS
Fabricators Since 1928
WEST POINT, GA.





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by BAGSHAW

of these materials, it can be cut with a knife or hacksaw and buried in concrete, ceilings, or floors.

The Flexhaust Co., 100 Park Ave., New York 17, N. Y.

Do you want more data? Write ◆ or use card on page 229; list J-219

Electric wrench with torque control. Now available is an electric hand tool which runs down fastenings with great power and speed to a preset torque and then automatically shuts itself off when the present torque is reached. Called the 5UT "Torsion Bar" Torque Control Electric Impactool, it has a ½" square drive and takes bolt sizes up to ⅝" dia., and weighs only 6½ lb.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Do you want more data? Write ◆ or use card on page 229; list J-220

Solid lubricant for high speeds and heavy loads. Lubri-Bond "A" is a solid-film lubricant packaged in a handy spray-on aerosol bomb. When sprayed on troublesome parts, both metallic and nonmetallic, it provides a long-lasting, resin-base lubricant in temperatures from —300 F to 500 F. Good for use on parts operating at high speeds and under extremely high loads, it can be used with oils or greases when oil is needed as a cooling agent; or without oil when no cooling agent is needed.

Electrofilm, Inc., P. O. Box 106, North Hollywood, Calif.

Do you want more data? Write ◆ or use card on page 229; list J-221

Meter counts work done only. The Telemetering Load Cycle Counter will accurately count only work or operations actually performed. It differentiates between idling, dry run, and load cycle and counts only the load cycle. It is actuated by sensing the current flow to electrically-driven machines. The unit is adaptable for accurate proximity or impact counting. It can also be used as a warning and/or counting instrument for material change characteristics. The telemetering feature permits simultaneous counting at the machine and at remote locations such as a production control center.

Ram Meter, Inc., 1100 Hilton Rd., Detroit 20, Mich.

Do you want more data? Write ◆ or use card on page 229; list J-222

Better storage for unitized loads. The all-steel Portable Pallet Horse (a portable storage rack for stacking packaged goods three or four high) offers low cost per foot storage of unitized loads on pallets or skids, and permits both flexible and efficient operation with practically any type of lifting equipment. It permits the selection of any unit load; is set up or knocked down without the use of bolts — cross bars and uprights are slip-fit.

The Paltier Corp., 1701 Kentucky St., Michigan City, Ind.

Do you want more data? Write ◆ or use card on page 229; list J-223

User can tailor temperature controls. Indicating temperature controllers, Series 541, built around interchangeable elements, and having an accuracy of plus or minus 2 F, are rugged, easy to read, and convenient to adjust and service in the field. The user can tailor the control to his application — every major controller element (switching and indicating mechanisms, switch type, temperature range, housing, bulb diameter, capillary length, and materials of construction) is available in several variations or ratings. The user has a choice of four control mechanisms which vary basically in the number of circuits that can be controlled, and in the adjustment and indication

of temperature setpoints.

Fenwal Inc., Ashland, Mass.

Do you want more data? Write ◆ or use card on page 229; list J-224

Vaporizer banishes roaches, flies. The Galitrol Vapor Insect Control unit will banish insect pests in a ceaseless operation as long as the unit is kept charged with Galin Crystals and is kept plugged into an a-c or d-c outlet. Normally the unit is mounted on the wall about three feet from the ceiling. One vaporizer will effectively control insects in a volume of 15,000 cu ft.

General Industrial Co., 5738 N. Elston Ave., Chicago 30, Ill.

Do you want more data? Write ◆ or use card on page 229; list J-225

Galvanized drop wires. Now available are galvanized drop wires designed to resist rust longer than do wires of other finishes. Also they are as effective with electric stop motions as are wires of conventional finish.

Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

Do you want more data? Write ◆ or use card on page 229; list J-226

Heavy nylon in 30-lb packages. Caprolan nylon heavy yarns are now put up in 30-lb packages, knotless, and on nonreturnable tubes. The yarns range from 2000 to 50,000 denier, have high strength, toughness, and affinity for all types of dyestuffs. They are also available in 10-lb packages.

Allied Chemical and Dye Corp., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

Do you want more data? Write ◆ or use card on page 229; list J-227

Spray on this belt dressing. Ease and safety of application and no waste of material are advantages to be derived by using Cling-Surface belt dressing in a pressurized container.

Cling-Surface Co., 1044 Niagara St., Buffalo, N. Y.

Do you want more data? Write ◆ or use card on page 229; list J-228

New books

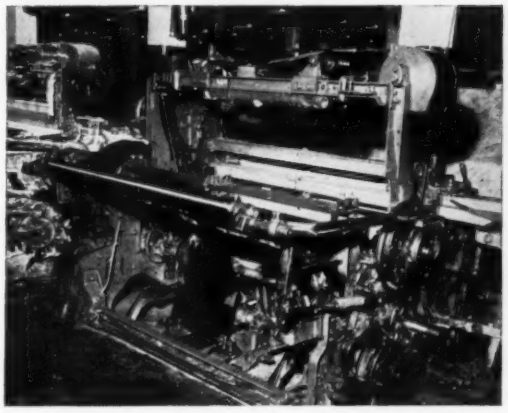
The reports and discussions held in conjunction with the annual Plant Maintenance and Engineering Show are given in *Techniques of Plant Maintenance and Engineering—1956*. The volume contains all the prepared papers, the transcripts of the discussions that followed them, and reports of the 15 round-table discussions at which specific problems of industries were discussed in detail. Copies may be obtained from Clapp and Poliak, Inc., 341 Madison Ave., New York 17, N. Y. Price, $10.00.

The Theory and Technique of Cost Accounting in the Hosiery Industry is a discussion of the problems of standard cost accounting peculiar to the hosiery industry. The theories and techniques presented are designed to aid those with intimate knowledge of local conditions in the development of bookkeeping procedures, construction of forms, charting accounts, etc. Not formally divided into sections, the material is presented in such a way that it falls into three parts: (1) the history of the knitting industry and the economics of the hosiery industry; (2) the theory of standard costs; and (3) techniques and methods for employing standard costs in a hosiery manufacturing company. Written by A. Wayman Patrick, this 229-page book can be obtained from the University of Michigan, Ann Arbor, Mich.

The report of the proceedings of the eighth annual conference of the Society for the Advancement of Management, *Management for Tomorrow*, contains 195 pages, 38 illustrations, and is available from the Chilton Company, Philadelphia, Pa., at $6.00 Per copy.

reduce seconds with LINTGO*

** the new help for lint-clogged machinery*



LINTGO leaves machinery clean and lint-free as above. Lint does not swirl into the air.

SPRAY ON LINTGO—BLOW DOWN LINT DROPS TO THE FLOOR

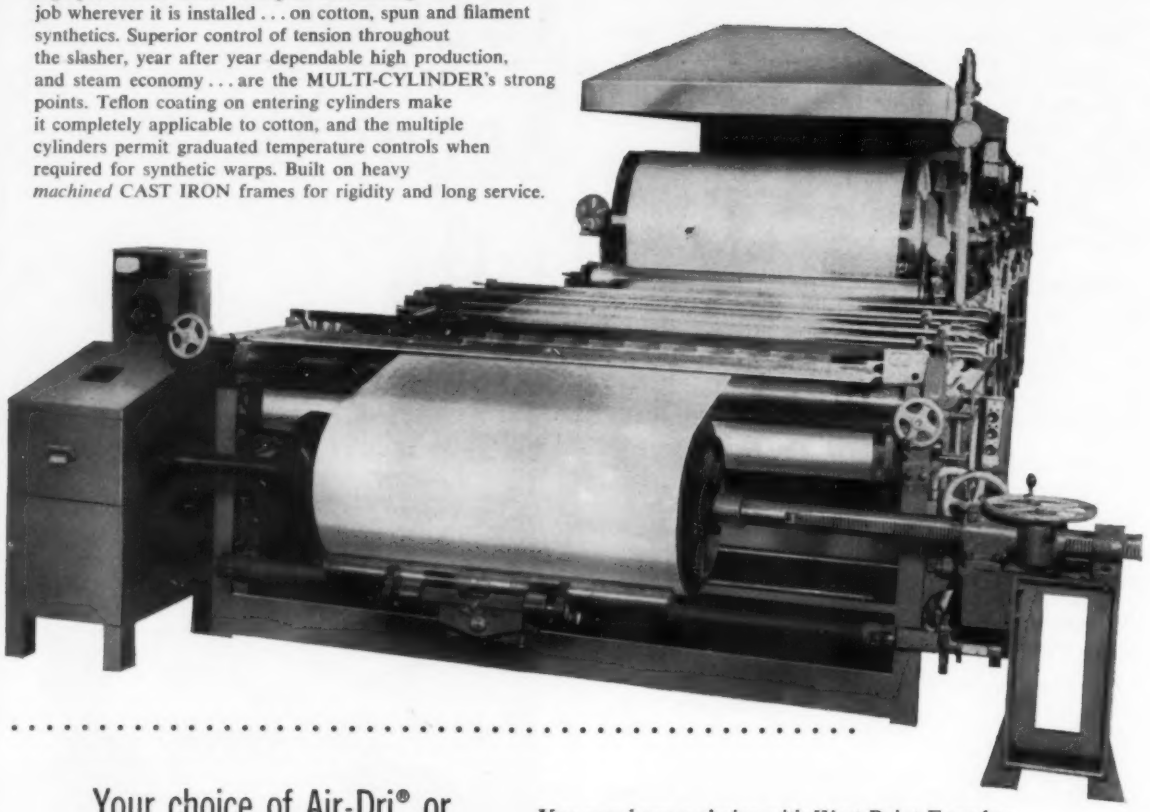
If you have lint-clogged looms; greasy, linty ring-rails and winder cams; drive cylinders that are so greasy your tapes slip constantly; or any one of countless other lint or grease problems, you will find LINTGO a life-saver!

LINTGO reduces slubs, seconds, and improves quality. It is non-corrosive, odorless, non-flammable, fumeless, non-toxic and inhibits rust. It can and will solve your lint problems quickly, easily, economically and without hazard. Send for technical literature explaining properties, methods of application, etc., today using the handy, postage-paid return card on page 229.

Lester Laboratories, Inc.

P. O. BOX 4897 ATLANTA 2, GA.

MULTI-CYLINDER SLASHER—An extremely versatile high-production slasher doing an outstanding job wherever it is installed . . . on cotton, spun and filament synthetics. Superior control of tension throughout the slasher, year after year dependable high production, and steam economy . . . are the MULTI-CYLINDER's strong points. Teflon coating on entering cylinders make it completely applicable to cotton, and the multiple cylinders permit graduated temperature controls when required for synthetic warps. Built on heavy *machined* CAST IRON frames for rigidity and long service.



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SLASHERS

Yes, you have a choice with West Point Foundry, because West Point makes *both* MULTI-CYLINDER and AIR-DRI Slashers. And *both* are high producers . . . quality producers. Whether it's a complete slasher installation or modernization of present equipment . . . call West Point Foundry . . . specialists in slashers. They offer you a choice!

AIR DRI® SLASHER—A modern hot air slasher second to none —designed, made *and serviced by* an experienced slasher manufacturer located conveniently in the Textile South. AIR-DRI's insulated enclosure provides a clean and comfortable slasher room . . . for cotton, worsted, and spun synthetic warps. Made with two fans or three fans . . . for either 54½" or 72" warps.

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HELPFUL BOOKLETS FREE!

9-1 PYROMETER INDICATOR. New 8-page catalog No. 25-3 describes Thermo-Electric's Pyrometer Indicator itself and the models in which it is available. Write Thermo-Electric Co., Inc., Rochelle Park Post Office, Saddle Brook, N. J.

9-2 TRAY-TYPE DEAERATOR. Cochrane Publication 4652 describes a popular deaerator design guaranteed to provide complete deaeration. Write Cochrane Corp., 17th St. below Allegheny, Philadelphia 32, Pa.

9-3 TRU-DRAFT CREELS. Brochure describes the Bouligny Tru-Draft Umbrella Creel as easy to install, adaptable to all frames, completely adjustable, etc. Write The Bouligny Co., P. O. Box 2115, Charlotte, N. C.

9-4 PNEUMATIC OPERATORS. Bulletin B-1020-5 illustrates and describes Conoflow's Series B-10 and B-20 Spring and Diaphragm Conomotors, rugged versatile operators available from the factory in complete valve assemblies. Write Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.

9-5 COST-CUTTING TEXTILE OILS. New pamphlets have been issued on two oils: Gulfspin, the spindle oil that is said to reduce maintenance and power costs, and Gulftex 39, the nonstaining needle oil that is claimed to keep needles clean and smooth. Write Gulf Oil Corp., Rm. 1204 Gulf Bldg., Pittsburgh 30, Pa.

9-6 CENTRIFUGAL PUMPS. A new bulletin, Form 7223-B, covering the complete line of class CRV cradle-mounted centrifugal pumps has been announced by Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

9-7 HARDENED AND GROUND SHAFTING. A new 4-page bulletin (plus a Standard Size List page) describes the new "60 Case" hardened and ground material for shafting, rolls, guide rods, etc. Write Thompson Industries, Inc., Manhasset, New York.

9-8 FLOOR PLATE. New folder describes a floor surfacing armor, which is both economical and will add substantially to the life of heavy-traffic industrial cement floors. Write Acme Steel Co., 2840 Archer Ave., Chicago 8, Illinois.

9-9 STEEL VALVES. New Catalog No. 700, describes New Velan Forged Steel Bonnetless Valves Series plus outstanding engineering advantages. Write Velan Steam Specialties, Inc., 37 South River St., Plattsburg, New York.

9-10 CHEMLON. A new 12-page brochure on Chemlon, "John Crane" products fabricated from DuPont Teflon, gives valuable information on that remarkable material as well as many applications for which it can be fabricated. Write Crane Packing Co., Dept. TIA, 6400 Oakton St., Morton Grove, Ill.

9-11 AHCOVEL SUBSTANTIVE SOFTENERS. Brochure gives physical and chemical properties, product characteristics and uses of the Ahcovel Substantive Softeners. Write Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.

9-12 TEXTONE NaClO2. Booklet explains the use of this Sodium Chlorite Product for Textile Processing. Write Olin Mathieson Chemical Corp., 460 Park Ave., New York 22, New York.

Get the most out of your desizing agent!

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Here is an easy-to-use, economical desizing agent which is absolutely safe on all fabrics . . . a quick and complete starch digester . . . always dependable.

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The things listed below will cause inferior roving. Only Adamstop* protects you against all of them. It will pay you to keep this advertisement and *ask all of these questions* before you buy any roving stop motion.

Does it Detect	Adamstop	Any other
Roll lap ups	yes	no
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Plugged flyers—before an end breaks	yes	no
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Sliver runouts	yes	no
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Does it stop doublings?	yes	no

	Adamstop	Any other
How about power?	12 volts-only when frame is stopped	2 HP all the time
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And Adamstop costs less—less to buy and less to maintain. Why pay more for a fraction of the protection? Be sure to investigate Adamstop before you buy.

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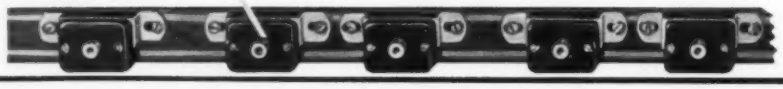

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GENERAL, ECONOMICAL MANAGEMENT . . .

3. HOW BEECHCRAFT SAVES YOU TIME AND MONEY — Booklet available from Southern Airways Company shows how Beechcraft executive airplanes can save executives time and money. Write — SOUTHERN AIRWAYS CO., Atlanta Airport, Atlanta, Ga.

6. FACTORING SERVICE — Booklet by Trust Company of Georgia gives advantages of factoring, including also information on general banking and pension plans. — TRUST COMPANY OF GEORGIA, Atlanta, Ga.

8. TEXTILE RESEARCH AT AMERICAN VISCOSE — Color booklet tells the story of the Textile Research Department which is, in effect, a many-sided textile mill. — AMERICAN VISCOSE CORP., 350 Fifth Avenue, New York 1, N. Y.

11. "WHERE DID THEY HIT PAY DIRT?" — Booklet describes how many manufacturing concerns have come South and why they found it profitable. Gives industrial advantages of the Southeast. Write CENTRAL OF GEORGIA RAILWAY, Industrial Development Department, 501 Rhodes Haverty Bldg., Atlanta 3, Georgia.

15. NEW INDUSTRIAL FIBER — Technical bulletin now available on Fortisan-36, new industrial fiber by Celanese. Uses text, charts and diagrams to present technical properties, characteristics and recommendations for processing. — TEXTILE SALES DEPARTMENT, Celanese Corporation, Charlotte, N. C.

17. A FAIR DAY'S PAY AND IN RETURN A FAIR DAY'S WORK — 8-page booklet outlining the services offered to industry for the proper utilization of labor, material and equipment, and the resulting advantages for both labor and management. — AMERICAN ASSOCIATED CONSULTANTS, INC., 250 Park Ave., New York, N. Y.

18. RAYON—MILE BY MILE — Color booklet describes how Industrial Rayon Corporation produces rayon mile by mile which is perfect inch by inch. — INDUSTRIAL RAYON CORP., Fifth Ave., New York 18, N. Y.

22. THE WONALANCET WAY — Is the title of an editorial booklet published five times a year and deals with crrent problems which appear worthwhile at the time they are written. — WONALANCET COMPANY, 128 Burke St., Nashua, N. H.

23. TEXTILE STEELS — Six booklets are available from Atlantic Steel Company which will prove valuable to persons concerned with the purchase or use of steel. — ATLANTIC STEEL CO., P. O. Box 1714, Atlanta 1, Ga.

24. THE CHEMSTRAND NYLON STORY — Booklet describes one of the greatest industrial ventures of the textile industry in the South — the birth and growth of Chemstrand Nylon. — CHEMSTRAND CORP., 350 Fifth Ave., New York 1, N. Y.

PLANT & PLANT MAINTENANCE . . .

102. "TANK TALK" — Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels; cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said — R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. HUMIDIFICATION, EVAPORATIVE COOLING — Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment. — AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

104. STORAGE WATER HEATING — Isotherm Storage Water Heating Bulletin No. 923 on hot water heating to stretch boiler capacity. Write FRED H. SCHAUB ENGINEERING CO., 2110 South Marshall Blvd., Chicago 23, Illinois.

105. CASTERS AND WHEELS — Catalog gives complete description on full line of industrial casters and wheels. Features patented "LOCKWELD" Steel Casters Without A Kingpin" both Single and Double Ball Race. — THE FAIRBANKS CO., 393 Lafayette St., New York 3, N. Y.

106. FINNELL COMBINATION SCRUBBER-VAC —Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors. — FINNELL SYSTEMS, INC., 1300 East St., Elkhart, Indiana.

111. CERTIFIED CLIMATE AIRCHANGER SYSTEM — Bulletin describes Certified Climate Airchanger System as used with direct humidification for partial or complete air conditioning. — PARKS-CRAMER CO., Fitchburg, Mass.

112. HARDWOOD FLOORING — Booklet entitled "Specialist in Manufacturing of Hard Maple Flooring for Textile Plants." For complete information, write — CONNOR LUMBER & LAND COMPANY, P. O. Box 810, Wausau, Wisconsin.

113. COTTON MILL EQUIPMENT — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc. — WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

114. PENETRATING WOOD FINISH — Bulletin gives applications, uses and application specifications of floor seals for textiles. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIVISION, Wilmington, Delaware.

115. FOAMGLAS — Illustrated brochure features information on how the use of Foamglas cellular glass insulation solved the severe insulating problems of leading users. — PITTSBURGH CORNING CORP., One Gateway Center, Pittsburgh 22, Pa.

116. STOP CORROSION — Details on speed Rex paint for metal, wood and concrete maintenance solving condensation problems. — TRUSCON LABORATORIES, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

117. CLEANING SYSTEMS — Booklet entitled "Certified Climate and Cleaning Systems" gives latest information on system. Products and uses fully discussed with two story layout of Certified Climate central station air conditioning system. — PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

118. LIQUIDATION INFORMATION — Information available on how eo profitably dispose of mill properties being liquidated. Tells how Comer will buy, sell and relocate industry in your former site. — COMER MACHINERY CO., 684 W. Peachtree St., Atlanta, Ga.

120. STAINLESS STEEL FOR TEXTILES — 40-page booklet gives applications and advantages of stainless in textile plant equipment of all types. — ALLEGHENY LUDLUM STEEL CORP., Dept TI-71, Oliver Bldg., Pittsburgh 22, Pa.

121. CRANES AND HOISTS — Portfolio of bulletins describes the complete line of Shepard Niles traveling hoists and floor or cab operated traveling cranes. — SHEPARD NILES CRANE & HOIST CORP., Montour Falls, N. Y.

122. TEXTILE MILL CLEANING GUIDE — Useful book by Oakite prescribes methods and means of proper mill cleaning and maintenance. — OAKITE PRODUCTS, 26C Rector St., New York 6, N. Y.

123. ROLLER BEARINGS FOR TEXTILES — Easy to read non-technical bulletin describes where and how Hyatt Roller Bearings are employed for more profitable textile production. — HYATT BEARINGS DIV., GENERAL MITORS CORP., Harrison, N. J.

125. STATIC ELIMINATION — Bulletin by Simco describes effective, simple, safe and inexpensive means of eliminating static. — SIMCO COMPANY, 980 Walnut St., Lansdale, Pa.

126. TOLEDO TRUCK SCALES — Booklet tells how mills may save on installation and throughout long, useful life of Toledo Truck Scales. Gives capacities and advantages. — TOLEDO SCALE COMPANY, Toledo 1, Ohio.

HELPFUL BOOKLETS FREE!

127. SOLENOID VALVES — Bulletin "V" lists sizes from 1-2 inch to 3 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three way solenoid valves, etc.; typical installations. — THE JOHNSON CORP., Three Rivers, Mich.

130. STAINLESS STEEL FABRICATION — Illustrated color booklet by Sims describes the advantages of stainless steel with regard to textile operations. Also includes information on ventilating and drying, slasher exhaust, and materials handling systems. — SIMS METAL WORKS, West Point, Ga.

131. "AIR-PROCESSING" — Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

132. AUTOMATIC BOILERS — Bulletin describes POWER-MASTER Automatic Boilers for light and heavy oil; gas or combination Gas-Oil Firing. Complete table of data. — ORR AND SEMBOWER, INC., Reading, Pa.

133. AIR LINE FILTERS — Catalog describes various air line filters for removal of oil, corrosive moisture, abrasive pipe scale, rust, and other solids from compressed air lines. Write for Catalog No. 700. — C. A. NORGREN CO., 3450 So. Elati St., Englewood, Colo.

134. CUT WATER TREATMENT COSTS — Folder presents Oakite Airefiner No. 52, a mildly alkaline compound, that is said to control scale, slime, algae and corrosion. Write OAKITE PRODUCTS, INC., 126C Rector St., New York 6, N. Y.

135. COLOR CONDITIONING — Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIV., Wilmington 98, Delaware.

138. METAL CONVEYOR BELTS — Recent catalog describes and illustrates Ashworth's entire range of manufacture, including the new Flat Wire Bolt design and application, along with their Woven Wire Constructions and Positive Drive Chain Edge belts. —ASHWORTH BROS. INC., METAL PRODUCTS DIV., Fall River, Mass.

141. SEAMLEX METAL HOSE — New illustrated bulletin No. 955 gives essential information on Seamlex Bronze Hose and diesel exhaust hose. Write SEAMLEX CO., INC., 41-23 24th St., Long Island City, N. Y.

143. UNIT HEATER — The latest improvements, specifications, and complete performance data for Herman Nelson horizontal and vertical unit heaters have been written into a new 36-page product bulletin by the AMERICAN AIR FILTER CO., INC., 215 Central Ave., Louisville, Ky.

144. SCHAUB "93" DEAERATORS — Bulletin No. 1300 explains how modern design, a simplified principle and advanced engineering now bring effective deseration at a budget price. Write FRED H. SCHAUB ENGINEERING CO., 2110 South Marshall Blvd., Chicago 23, Illinois.

146. FUNCTIONAL GLASS BLOCK DATA — Folder shows in detail daylighting function of Light-directing and Light-diffusing Functional Glass Blocks. — PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS — Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems. — ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES — Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines — also flock, raising and cylinder brushes. — M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. LAMINATED TEXTILE PLASTICS — Booklet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry. — SYNTHANE CORPORATION, TEXTILE DIVISION, Oaks, Penna.

161. AUTOMATIC CLEANING EQUIPMENT — Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit. — AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE — Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors.— G. H. TENNANT COMPANY, 2530 N. Second St., Minneapolis 11, Minn.

173. BLOWERS AND EXHAUSTERS — Bulletin No. 3914-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings. — BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

174. PAINT STRIPPING BOOKLET — Illustrated booklet providing helpful data on latest materials and methods for simplified stripping of paint. Methods described include: (1) steam gun; (2) hot flow-on; (3) cold spray; and (4) tank immersion. — OAKITE PRODUCTS, INC., 22 Thames St., New York 6, N. Y.

181. AIR FILTRATION — Bulletin 234 describes and illustrates the Auto-Airmat, which is the Automatic Dry-Type air filter. Principle of operation, performance, characteristics, construction and installation fully discussed. — AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

203. TREADED LEATHER BELTING — This 16 page booklet describes Houghton's line of patented, specially treaded leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section. — E. F. HOUGHTON & CO., Philadelphia, Pa.

205. MAINTENANCE OF VARIABLE SPEED DRIVES — Bulletin describes and illustrates the simple but comprehensive program available to keep Reliance V-S Jr. Drives in operation at peak efficiency.—RELIANCE ELECTRIC & ENGINEERING CO., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

208. CUTLER-HAMMER MOTOR CONTROL — Booklets describe the combination starters for the textile industry, for roving frames and spinning frames, loom switch and Cutler-Hammer Motor Control for textile cards. — CUTLER-HAMMER, 315 N. 12th St., Milwaukee, Wisconsin.

209. STEEL PULLEYS — Pictorial review of American Steel Pulleys, their manufacturing processes and some of their end uses. Textile pulleys are featured. — AMERICAN PULLEY CO., 4200 Wissahickon Ave., Philadelphia 29, Pa.

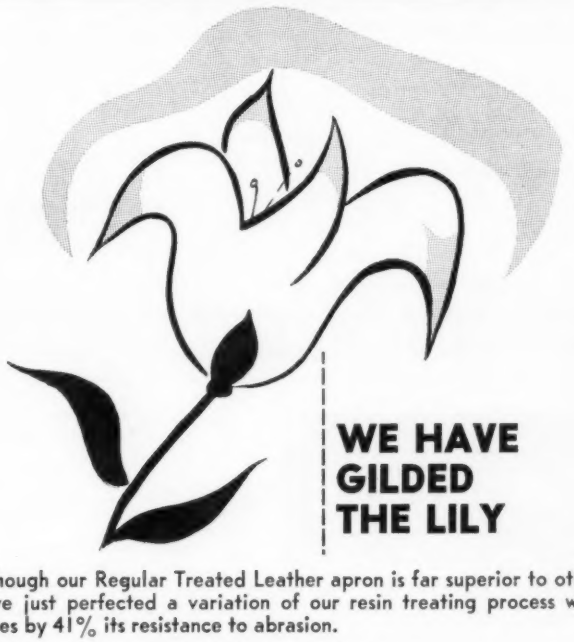
211. LUBRICANTS FOR TEXTILES — Working samples available of Ben Boy Bearing Lubricants, Spindle Oils, Non-Melting Oils, Twister Lubricants. — GEORGIA-CAROLINA OIL CO., Box 101, Macon, Ga.

212. GATES TEXTILE ACCESSORIES — Handy pocket-size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps, take-up roll covering, and others. — THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

213. LUBRICATION OF ELECTRIC MOTORS — Illustrated bulletin on lubricating and cleaning ball and roller bearings on electric motors. — NEW YORK & NEW JERSEY LUBRICANT COMPANY, 292 Madison Ave., New York 17, N. Y.

218. BALL BEARINGS FOR TEXTILE MACHINERY — A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing. — THE FAFNIR BEARING CO., New Britain, Conn.

222. AUTOMATIC PRODUCTION CONTROL — Booklet by Reeves Pulley Company, shows application of many automatic processes and controls to the textile industry. Well illustrated, it contains engineering data quite useful to anyone interested.—REEVES PULLEY COMPANY, Columbus, Indiana.



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If untreated leather 100
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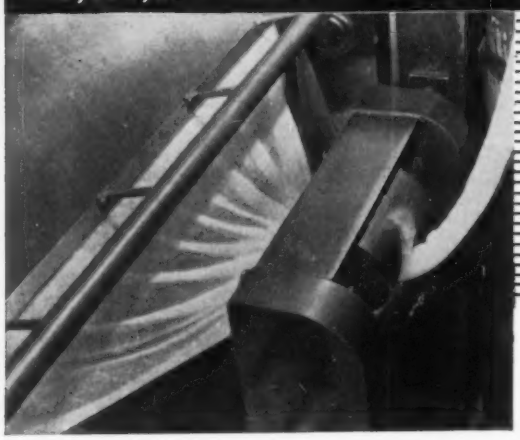

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223. LUBRICATION OF BEARINGS — Booklet entitled "Lubrication and Maintenance of Ball and Roller Bearings" gives helpful list of do's and don'ts to prolong bearing life. Also includes valuable information on storage and handling of lubricants. — NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York 17, N. Y.

225. HYDRAULIC SLASHER DRIVES — Color booklet by Vickers shows how hydraulic drives provide an economical approach to improved slasher operation. Has detailed pictures and enumerates advantages. — VICKERS, INC., 1036 Peachtree St., Atlanta, Ga.

228. NEW NEEDLE OIL — Booklet by Shell gives facts on Vexilla Oil 117, which gives 12 times more rust protection during operation and during shut-down periods. — SHELL OIL CO., 50 West 50th St., New York 20, N. Y.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY — Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive. — DODGE MANUFACTURING CORP., Mishawaka, Indiana.

230. INDUSTRIAL GREASES — Now available from Sinclair is a bulletin detailing qualities and specifications of multi-purpose lithium soap industrial greases. — A. S. RANDAK, SINCLAIR REFINING CO., 600 Fifth Ave., New York, N. Y.

231. MECHANICAL POWER TRANSMISSION — 328-page catalog contains helpful information on Dodge products, including sectional drawings, dimensions, weights, prices, application details and engineering tables. Write DODGE MFG. CORP., Mishawaka, Indiana.

232. "VARI-PITCH" SHEAVE BULLETIN — Stationary and motion control of "Vari-Pitch" sheaves for speed variation up to 76% by means of pitch diameter adjustment, capacities 1 to 600 HP are described in new bulletin. — ALLIS-CHALMERS MFG. CO., Milwaukee 1, Wisconsin.

233. LEATHER BELTING — Booklet by Atlanta Belting Co., describes comprehensively the selection, installation, and proper maintenance of modern leather belting. — ATLANTA BELTING CO., 508-510 Whitehall St., S.W., Atlanta, Ga.

234. SPINDLE OIL — Color brochure describes "Gulfspin," showing how it insures against excessive wear in cast iron bolsters and provides freedom from spindle wobble. — GULF OIL CORPORATION, Gulf Bldg., Pittsburgh, Pa.

235. JOHNSON LEDALOYL BEARING BRONZE — Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings. — JOHNSON BRONZE COMPANY, New Castle, Pa.

237. MOTOR CONTROL — Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed. — CUTLER-HAMMER INC., Milwaukee, Wisc.

238. TEXTILE LEATHERS CATALOG — Catalog by J. E. Rhoads & Sons gives characteristics and advantages of Rhoads "Tannate" leathers. Complete line is listed and described, and tips for correct installation. Copiously illustrated. — J. E. RHOADS & SONS, 2100 W. Eleventh St., Wilmington 99, Del.

240. CATALOG OF NEEDLE BEARINGS — New catalog conveniently presents design, application and use data for five types of needle bearings. Actually an engineering short course on bearings with visual index units. — THE TORRINGTON CO., Torrington, Connecticut.

242. CYLINDERS AND BOOSTERS — Book by Miller Fluid Power Co. contains complete listing of air and hydraulic cylinders and boosters "in stock," price lists, and graphic explanation of their equipment. Write MILLER FLUID POWER CO., 2040 N. Hawthorne, Melrose Park, Illinois.

253. TEXTILE LUBRICATION — "Lubrication" a magazine published by the Texas Co. is available. Shows methods and means of lubricating chain drives in very comprehensive form. — THE TEXAS CO., 135 East 42nd St., New York 17, N. Y.

256. METERED LUBRICATION — Booklet entitled "From Fiber to Fabric." Shows advantages of central lubrication systems as applied to various departments of textiles. Write — BIJUR LUBRICATING CORP., Rochelle Park, N. J.

265. SERVICE PROCEDURE FOR BALL BEARINGS — A helpful manual for maintenance engineers giving helpful hints on disassembly, inspection, cleaning, lubrication, and replacement of ball bearings in any mechanism. — NEW DEPARTURE, DIVISION OF GENERAL MOTORS CORP., Bristol, Conn.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

302. TEXTILE INSTRUMENTATION—New booklet gives details on Brush Lapcheck, Brush Tension Analyzer, Brush Imperfection Counter, and Improved Uniformity Analyzer. Pictures uses and capacities of each machine discussed. — BRUSH ELECTRONICS CO., 3405 Perkins Avenue, Cleveland 14, Ohio.

304. WASTE HEAT RECOVERY — Color booklet describes Bready System of waste heat recovery from polluted or soiled waste water. Includes pictures and complete facts. — LUDELL MFG. CO., 5200 West State Street, Milwaukee, Wisconsin.

305. AUTOMATIC MOISTURE CONTROL—Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics.—HUNTER CONTROLS, INC., DIV., JAMES HUNTER MACHINE CO., North Adams, Mass.

310. HOW TO SELECT LIQUID METERS — Helpful free bulletin covers meters for brines, soap solutions, hot and cold water and other chemical solutions that can be handled by composition bronze meters. Write for bulletin 5561TI. — NEPTUNE METER CO., 10 W. 50th St., New York 20, N. Y.

313. "THE FAIRBANKS VALVE COMPARISON CHART" — New reference manual important in specification, ordering, and using of bronze and iron-body valves. — THE FAIRBANKS COMPANY, 393 Lafayette Street, New York 3, N. Y.

315. MICRO SWITCH BULLETIN — Complete selection of bulletins featuring Micro Switch products is now available. Includes prices, characteristics, applications, etc. — MICRO SWITCH DIV., MINNEAPOLIS-HONEYWELL REGULATOR CO., Freeport, Ill.

316. MOISTURE CONTROLLER AND INDICATORS — Literature available from Strandberg Engineering covers indicators for slashers, tenters, etc.; for direct connection to pickers, and automatic controllers for connection to same. — STRANDBERG ENGINEERING LABORATORIES, 416 W. Market St., Greensboro, N. C.

321. RED-RAY BURNERS — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame. — RED-RAY MFG. CO., 445 W. 45th St., New York, N. Y.

324. STROBOTAC — Informative reprint, "Strobotac Boosts Efficiency in Woolen and Synthetic Mills." — GENERAL RADIO CO., Cambridge 39, Mass.

337. COUNTING DEVICES — Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application. —TRUMETER COMPANY, 1265 Broadway, New York 1, N. Y.

339. NEW LUBRICATED PLUG VALVES—Illustrated booklet by The William Powell Co. features a new line of semi-steel and steel lubricated plug valves. Advantages include quick and positive shut off. — THE WILLIAM POWELL COMPANY, 2525 Spring Grove Ave., Cincinnati 22, Ohio.

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CARDING, SPINNING, WINDING . . .

401. LUMMUS DUSTLESS STEEL BLENDING FEEDERS — Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking. — ALDRICH MACHINE WORKS, Greenwood, S. C.

402. AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS — 24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings. — THE AMERICAN MONORAIL CO., Cleveland, Ohio.

403. TRAVELING CLEANERS — 4-page bulletin describes the improved Parks-Cramer Frame and Room Cleaners including the Underframe and Floor Sweepers. — PARK-CRAMER CO., Fitchburg, Mass.

404. LAPLESS ENDLESS SPINNER — Bulletin and full information will be supplied on lapless endless spinner and coning belting. — TON-TEX CORPORATION, 31 Columbus Ave., Englewood, N. J.

408. CARD GRINDING INFORMATION — Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information. — B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

410. SPINNING FRAME CONVERSIONS — Information available on how to get new-frame results and big-package economy at half the cost with Meadows Conversions. — MEADOWS MFG. CO., P. O. Station A, Atlanta, Ga.

411. SHEET METAL WORK — Pamphlet describes spinning cylinders, aspirators, card screens, sheet metal specialties. — GASTONIA TEXTILE SHEET METAL WORKS, INC., 222 East Long Avenue, Gastonia, S. C.

412. SERVICE FOLDER — Folder covers textile metal products including spinning and twisting cylinders, card screens, etc. — JENKINS METAL SHOPS, INC., Gastonia, N. C.

413. HIGH SPEED, AUTOMATIC QUILLER — Color booklet by Schlafhorst describes the "Autocopser" Automatic Quiller. Gives advantages, space requirements, etc. — TERRELL MACHINE CO., INC., Charlotte, N. C.

414. WORSTED SPINNING — Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top yarn in five economical and efficient stages. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

415. DOUBLER-TWISTER FOR LARGE PACKAGES — Bulletin describing two new machines producing straight or tapered top bobbins. Suitable for filament or spun yarns up to three pound capacity. Individual thread stop motion fully discussed. — FLETCHER WORKS, INC., Philadelphia, Pa.

416. THE BRIEF SAGA OF THE RING TRAVELER — An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Holster type spindle are covered. — NATIONAL RING TRAVELER CO., Pawtucket, R. I.

417. FEATHERTOUCH DRAFTING — Booklet describes in detail with pictures the most uniform drawing, the strongest drawing with the highest production per frame at the lowest cost. — IDEAL INDUSTRIES, INC., Bessemer City, N. C.

419. TEXTILE APRONS — Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery. — TEXTILE APRON COMPANY, East Point, Ga.

422. WARPER BEAMS — Folder describes the high speed for rayon tire cord, cotton warper beams, cast aluminum end supports and large diameter heads. — U. S. BOBBIN SHUTTLE CO., Lawrence, Mass.

423. SPINDLE OILING MACHINE — Information available on new Spindle Oiling Machine. Features include filter system to clean oil for reuse; smaller size for narrow aisles. — WICACO MACHINE CORP., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

424. GREASE-SEALED, ANTI-FRICTION ROLLS — Booklet contains description and engineering drawings of the Cole grease-sealed, anti-friction rolls. Also contains information on dual apron controlled drafting units. — COLE ENGINEERING CORP., P. O. Box 153, Columbus, Ga.

425. HANDY REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc. — VICTOR RING TRAVELER CO., Providence, R. I., and Gastonia, N. C.

426. UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unirail Uptwister which gives you higher yarn quality and better packages at faster speeds and lower costs, according to the bulletin. Well illustrated with advantages discussed. — UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence, R. I.

429. BETTER FLYER AND SPINDLE EFFICIENCY — Entertaining booklet by Ideal Machine Shops gives facts about Flyers and Spindles which have helped many mills gain more efficient production, better yarn quality. — IDEAL MACHINE SHOPS, INC., Bessemer City, N. C.

431. TEXTILE VACUUM SYSTEM — Color bulletin by Spin Sa Vac describes application of their vacuum system to drawing, roving and spinning processes, and for the removal of broken ends, fly or sliver. Complete diagrams and shots of typical installations. — SPIN SA VAC CORPORATION, 1438 South Tryon St., Charlotte, N. C.

432. PRECISION TEXTILE WINDING — Bulletin on Kidde Tensions and Density Control for winding rubber cones. — WALTER KIDDE & CO., INC., Belleville, N. J.

433. PERMANENT PLATE MAGNETS — Bulletin shows how Eriez Magnetic Separators prevent fires and protect machinery from tramp iron in all types of textile mills. — ERIEZ MFG. CO., Erie, Pa.

434. SPINNING AND TWISTER RINGS — Catalog and price list now available on Whitinsville "Diamond Finish" spinning and twister rings. Complete details and pictures. — WHITINSVILLE SPINNING RING CO., Whitinsville, Mass.

435. DOUBLE DECK TWISTERS — Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER — Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording. — SCOTT TESTERS, INC., Providence, R. I.

437. PRECISION GEAR BULLETINS — Now available from Precision Gear are bulletins on machinery products for cleaning and picking, roving frames, spinning and twisting and a general catalog on gears. — PRECISION GEAR AND MACHINE CO., 2001 N. Tryon St., Charlotte 2, N. C.

438. HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING — Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go direct to quilling or warping without redrawing. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

439. PNEUMAFIL SUCTION CLEANING SYSTEMS — Booklet describes types of Pneumafil Systems, gives details of new Collector Unit model C-4. New type LFC Pneumafil is also discussed. Diagrams, comparison charts and installation pictures included. — PNEUMAFIL CORP., Charlotte 8, N. C.

440. CUSTOM MADE THREAD GUIDES — Color brochure describes complete line of American Lava Company's thread guides. Composition, properties, specifications of all designs included. — AMERICAN LAVA CORPORATION, Chattanooga 5, Tenn.

444. OPENING AND CLEANING MACHINERY— Color brochure by Dodenhoff describes their waste machine, enclosed feeder, conveyors and cleaner. Specifications included with pictures. — W. D. DODENHOFF CO., Box 178, Greenville, S. C.

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445. ROLLER BEARING SPINDLES — Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described. — THE MARQUETTE METAL PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

447. CONE WINDER — Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply. — FOSTER MACHINE COMPANY, Westfield, Mass.

448. AUTOMATIC BLENDING SYSTEM—Dodenhoff system, called "Fiber Meter" is fully described in color booklet. Gives actual operating results, shows pictures and illustrates typical conversion of old fashioned systems. — W. D. DODENHOFF CO., 745 Loundes Hill Road, Greenville, S. C.

449. NEW CONDENSER TAPE — Literature by Benjamin Booth describes newly introduced SUPR-O-TAPE, an impregnated fabric condenser tape. Shows actual sample of tape and gives complete prices. — BENJAMIN BOOTH CO., Allegheny Ave., & Janney St., Philadelphia 34, Pa.

450. HIGH SPEED AUTOMATIC QUILLER — Color booklet describes the Schlafhorst "Autocoaser," listing its advantages and giving dimensions. — TERRELL MACHINE CO., INC., P. O. Box 928, Charlotte, N. C.

451. ROLLER BEARING SPINDLE — Color booklet gives principal features and main advantages of SMM Roller Bearing Spindle. Detailed drawings included. — H. PHIL WORTH, Box 1555, Greenville, S. C.

452. PNEUMAFIL LINT-FREE CREEL — Color booklet describes the new Airfoil Design Pneumafil type LFC with Built-in Lint-Free Creel. Gives complete details and pictures. — PNEUMAFIL CORPORATION, Charlotte 8, North Carolina.

453. EVENNESS TESTER — Folder explaining how this Tester takes the guess out of quality control and each processing step from carding through spinning. — USTER CORPORATION, Charlotte, N. C.

456. SRRL OPENER, SCREW CONVEYORS — Information available on Continental Gin Company's SRRL Opener. Also complete line of screw conveyors and accessories. — CONTINENTAL GIN CO., Birmingham, Ala.

458. CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and flyers. — HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

459. TENSION CONTROLS — Folder describing tension compensation and automatic tension controls. Three models — Standard, Warp, and Double Disc fully described with specific application. — WALTER KIDDE & CO., INC., 190 Main St., Belleville 9, N. J.

461. PRECISE WIND MACHINE — Form A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns. — FOSTER MACHINE COMPANY, Westfield, Mass.

462. TEXTILE MACHINERY PARTS CATALOG — A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Lug Straps, etc. — DAYTON RUBBER CO., Dayton, Ohio.

465. RAGAN SELF-LUBRICATING RINGS — Complete data available on new self-lubricating rings, outlining unique construction and absence of wicks. — RAGAN RING CO., 901 S. Main St., East Point, Ga.

467. CARD CLOTHING — 8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages. — BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney Streets, Philadelphia, Pennsylvania.

469. SHORT CUT TO STAPLE FIBER SPINNING — Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. — TURBO MACHINE COMPANY, Lansdale, Pa.

470. RATCHET DRIVE LUBRICATOR — Technical reference sheet describing an automatic ratchet-driven lubricator is offered. Describes in detail the key features, includes photographs. — BIJUR LUBRICATING CORP., 151 W. Passaic Ave., Rochelle Park, N. J.

471. FACTS ABOUT YOUR FLYERS AND SPINDLES — Booklet by Ideal Machine Shops shows how smooth Flyer and Spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins. — IDEAL MACHINE SHOPS, Bessemer City, N. C.

472. TWISTING MACHINERY — Bulletin gives outstanding features, specifications facts and useful information on Novelty Yarn Twisters for Cotton, Silk, Worsted and Rayon Yarns. — COLLINS BROTHERS MACHINE COMPANY, 647 Roosevelt Ave., Pawtucket, Rhode Island.

473. ALUMINUM SECTION BEAMS — Information available on advantages of Hayes beams. Includes prices and delivery schedules. — HAYES INDUSTRIES, INC., Jackson, Mich.

474. BALL BEARING COMB BOXES — Southern States Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut-a-way views shown. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

475. TEXTILE ROLL COVERINGS AND MILL SUPPLIES — Color booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies, roll covering for cotton, silk and synthetic and woolen and worsted systems. An excellent guide book. — ARMSTRONG CORK CO., INDUSTRIAL DIV., Lancaster, Pa.

476. TEXTILE FIBER OPENER FOR COTTON, SYNTHETICS, WOOL — New brochure by Cen-Tennial Cotton Gin Co. gives complete data on the Cen-Tennial Opener which incorporates improvements on the original SRRL Opener. Complete operating procedure is described. — CEN-TENNIAL COTTON GIN CO., Columbus, Ga.

478. TIPS ON CARDING PROCEDURE—Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. Bulletin is a reprint of section appearing on green paper in this issue. — ASHWORTH BROTHERS, Fall River, Mass.

484. COLLECTO-VAC. Catalog 30-A describes Bahnson's new development, COLLECTO-VAC, for collecting lint, fly and broken ends. Write THE BAHNSON CO., Winston-Salem, N. C.

485. WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter. — A. B. CARTER, INC., Gastonia, N. C.

486. COTTON SIZING WASTE PROBLEM SOLUTION — Booklet describes the use of soluble, low-pollutional CMC in place of starch and how this can reduce costs. — HERCULES POWDER CO., Wilmington 99, Delaware.

WEAVING, SLASHING . . .

501. LOOMS — An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed. — CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

502. COUNTING AND MEASURING DEVICES—Condensed textile catalog illustrating and describing pick counters, hank counters, cut meters, measuring counters. Wide range of counting devices for production recording on all types of textile machinery. — VEEDER-ROOT, INC., Hartford, Conn.

504. LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products. — E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

505. INNOVATION IN TEXTILE DRYING — Booklet by J. O. Ross gives details on Steam or Gas "Hot Air" Slasher for high speeds at low cost. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

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506. SLASHING HINTS — A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing seivages, cooking, use of split rods, weighing for the mix, tips on cooking equipment, storage in kettles, etc. — SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

508. LOOM PRODUCTION CHARTS — Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds. — RALPH E. LOPER CO., Greenville, S. C.

510. CONTROLLED SIZING — Brochure in color describes the legend, opeartion and specification of the new Griffin Size Machine. Features most important basic improvements in size machines in many years. — IRA L. GRIFFIN & SONS, P. O. Box 1576, Charlotte, N. C.

511. ALUMINUM BEAMS — Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types. — HAYES INDUSTRIES, INC., Jackson, Mich.

514. THE STORY OF STARCHES — Semi-technical booklet tells the story of starches and information on how they are produced, the creation of new specialty starches, the unique "man-made" starch derivatives, and the handling of starches. — NATIONAL STARCH PRODUCTS, INC., 270 Madison Avenue, New York 16, New York.

515. WARPING, SLASHING, WEAVING ARNEL YARNS — 8-page booklet preliminary information on Arnel Triacetate Yarns. — CELANESE CORP. OF AMERICA, TEXTILE DIVISION, Box 1414, Charlotte, N. C.

517. LOADING SYSTEM — Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices. — THE FOXBORO COMPANY, Foxboro, Mass.

519. ALIGNING LAYS — Informative booklet gives setting instructions for aligning lays. Complete treatment, including step-by-step drawings.—DRAPER CORPORATION, Hopedale, Massachusetts.

520. HELP ON SIZE PROBLEMS — Information from Southern Sizing Company outlines how their superior sizing compounds and superior service can help make your mill run better. — SOUTHERN SIZING CO., East Point, Ga.

521. STEEL WARP BEAMS — 20 page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broad-loom and narrow fabrics. Also Textile Machinery Specialties. — MILTON MACHINE WORKS, INC., Milton, Pa.

522. PENFORD GUMS IN TEXTILES — Brochure tells how the wide range of viscosities and the excellent properties of Penford Gums make them desirable for warp sizing spun yarns. — PENICK & FORD, LTD., INC., 420 Lexington Ave., New York 17, N. Y.

525. STAINLESS DRY CANS — Bulletin describes advantages of Unistel Stainless Dry Cans including details of construction. Profusely illustrated. — UNISTEL TEXTILE MACHINE CORP., 225 Westchester Avenue, Port Chester, N. Y.

526. SACO-LOWELL POSITROL SLASHER — Color Brochure gives 14 advantages of the Saco-Lowell Positrol Slasher. Includes photographs, cut-away drawings, sectional pictures, diagrams, Microphotographs. SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

530. ROTARY UNIONS — New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count." — PERFECTING SERVICE COMPANY, Atando Ave., Charlotte, N. C.

532. LOOM HARNESS REEDS. Pamphlet describes in detail the following reeds: All Metal Reeds, Pitch Band Reeds, All Metal Spring Baulk Reeds, All Metal Plush Reeds, All Metal Ribbon Reeds, and special reeds for Warner & Swasey Looms. Write STEEL HEDDLE MFG. CO., 2100 West Allegheny Ave., Philadelphia 32, Pa.

537. WEST POINT'S HOT AIR SLASHER — Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Works. Detailed specification included. — WEST POINT FOUNDRY AND MACHINE WORKS, West Point, Georgia.

538. AIR SLASHER DRYER. — Pamphlet by Proctor & Schwartz shows construction and operating details of the Proctor Air Slasher Dryer. Advantages listed and cut-away view shown. — PROCTOR & SCHWARTZ, INC., 7th St. and Tabor Rd., Philadelphia 20, Pa.

541. BOOKLETS ON COCKER CUSTOM BUILT EQUIPMENT — Six new bulletins available from Cocker include information on the high speed Warp Sizer, high speed Beam Warper, Cocker Creels and Tensions, Beam Back-Winders, Indigo Dyeing Ranges, Kettles, T-Boxes, etc. — COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.

545. NOPCO CHEMICAL DATA SHEETS — Now available are Nopcostats, Nopco Sizes N and D. Important points in Warp Sizing. Interpretation of Analysis. Wetting Agents. Balanced wool and worsted oils. Acetate warp sizing. Viscose warp sizing. Rayon soaking. — NOPCO CHEMICAL CO., Harrison, N. J.

DYEING, FINISHING CLOTH ROOM . . .

601. CONTINUOUS PEROXIDE BLEACHING RANGES — Booklet gives illustrations and describes uses and gives specification of Ranges. — RODNEY HUNT MACHINE CO., 49 Mill St., Orange, Mass.

603. EMCO ROTARY CUTTER WINDER — Bulletin gives applications, sizes and exclusive features.— H. W. BUTTERWORTH & SONS CO., Bethayres, Pa.

604. DYEING, BLEACHING AND DRYING EQUIPMENT — Excellent color brochure by Morton describes their complete line of dyeing, bleaching and drying equipment for cotton, wool and synthetics. — MORTON MACHINE WORKS, 1718 3rd Ave., Columbus, Ga.

606. HYDRAULIC POWER UNITS — Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operating of hydraulic calenders, presses, hydraulic controls, etc. — B. F. PERKINS & SON, INC., Holyoke, Mass.

607. RIBBON CALENDERS — Brochure features Dickerhoff Ribbon Calenders for the purpose of calendering, embossing, etc., of narrow fabrics. — ENGINEERING WORKS, HERM. DICKERHOFF LTD., Wuppertal Barmen, Western Germany.

608. WASHERS FOR SCOURING, BLEACHING, ACIDIFYING — Well-illustrated booklet shows how Sargent's modern, high-capacity, continuous process washers can help maintain quality and decrease costs. Contains operation diagram and good commentary on construction. — C. G. SARGENT'S SONS CORPORATION, Graniteville, Massachusetts, U.S.A., for bulletin 195.

609. WET PROCESSING MACHINERY — Complete file of bulletins on Riggs and Lombard Wet Processing Machinery available. Write for catalog index sheet giving summary. — RIGGS AND LOMBARD, INC., Suffolk Street, Lowell, Mass.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY — Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes pre-boarding and automatic boarding machines for hosiery. — PROCTOR & SCHWARTZ, INC., 7th and Tabor Rd., Philadelphia, Pa.

611. LOW COST DYEING — Bulletin by Blickman describes their fully enclosed, stainless steel Dyebox. Reports increased production per man hour and more runs per day at lower cost. Write for bulletin 7034.—S. BLICKMAN, INC., Gregory Ave., Weehawken, N. J.

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Widely used in warp sizing for spun rayon, blends and synthetics; warps desize readily.

TAKE ADVANTAGE of our free technical service. Our lab and field experts will welcome the opportunity to help you with actual production problems. Write us today.

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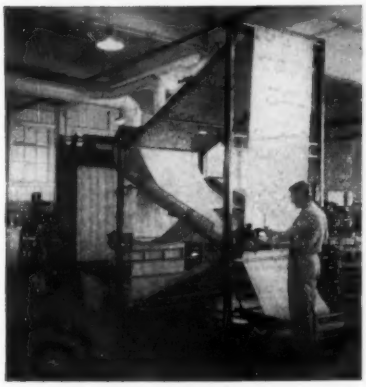
2 YEARS



ANNUAL SAVINGS EFFECTED WITH NEW HERMAS SHEAR

$3657.00!

A mill that was using two old type shears replaced them with one new Hermas shear.

The savings on wages, power, and maintenance; less, higher capital value and interest on the investment; plus, added production; soon amounted to the entire purchase price of the new equipment.

Let us figure out what replacing obsolete clothroom machines with new ones could do for you, in today's competitive market. No obligation at all on your part.

HERMAS

MACHINE COMPANY

227 ROYAL AVE., HAWTHORNE, N. J.

Specialists in clothroom equipment.

What the TEXTILE MILLS are doing

(Continued from page 50)

cludes plants in New York, New Jersey, and Pennsylvania.

At **Goodyear Clearwater Mills,** Atco, Ga., a new humidifying system was recently placed in operation on the second floor in the carding and fabric departments. Under normal conditions the washed-air system will keep the inside temperature at least 10 degrees lower than the outside temperature.

The plant of **Golden City Hosiery Mills, Inc.,** Villa Rica, Ga., was destroyed by fire on July 3, 1956.

Hampton Mills, Inc., a chenille plant of Ellijay, Ga., has begun operations with about 40 employees.

Lack of profit and the expected purchase of the plant building by another manufacturing concern, has led **Hart Spinning Mills, Inc.,** Nashua, N. H., to close its plant.

Employing 20 persons and producing rubber covered yarns for the hosiery industry, **Hickory (N.C.) Elastic Co.,** is housed in the Reaco Hosiery Mill.

F. C. Huyck & Sons, Rensselaer, N. Y., has acquired all outstanding capital stock of the **Waldorf Instrument Corp.,** Huntington Station, L. I., N. Y., producer of hydraulic servo components for jet aircraft engines and helicopters, and various electronic, hydraulic and electro-mechanical control devices. "The marriage of the Huyck company with Waldorf Instrument Corp.," said Huyck president G. R. Holden, "is in line with our policy of market diversification."

Jefferson (Ga.) Mills, purchased in 1916, recently celebrated its 40th anniversary with parties for the personnel at Jefferson and at Crawford, Ga.

The Kendall Company plans to shut down its Thrift Plant in Paw Creek, N. C., by mid-October in preparation for sale or liquidation of the plant, H. K. Hallett, vice-president, disclosed. He attributed the action to the changing demand for fabrics needed in the integrated operations of the Company, and the inability of the plant to meet these new require-

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For Spools and Bobbins

Anderson Shields are dependable protection against chipping, splitting, and breaking of spools, bobbins, and paper caps. Even the most minute details are carefully worked out to make Anderson the highest in precision, the smoothest in finish, the best in performance. The Anderson Emblem is your assurance of the finest shields you can buy.

Insist on Anderson when you order metal shields regardless of when you buy spools and bobbins.

TEXTILE SHIELD CO., INC.

J. N. ANDERSON, Treasurer

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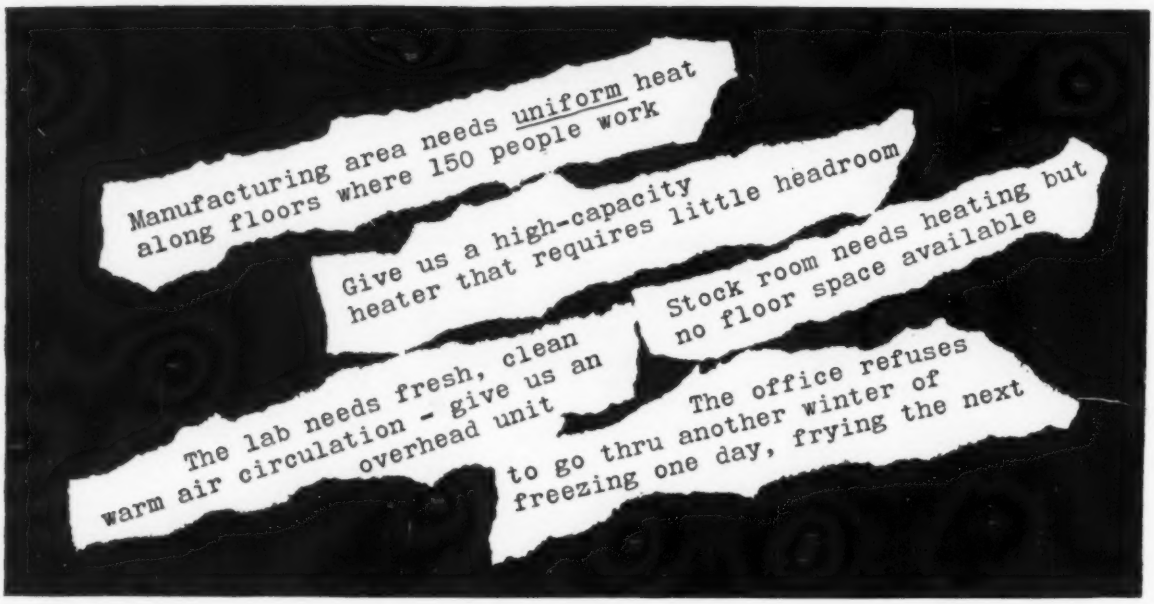
Manufacturing area needs uniform heat along floors where 150 people work
Give us a high-capacity heater that requires little headroom
Stock room needs heating but no floor space available
The lab needs fresh, clean warm air circulation - give us an overhead unit
The office refuses to go thru another winter of freezing one day, frying the next

"BUFFALO" HEATING & VENTILATING UNITS MEET ALL YOUR NEEDS!

FILTERS—HEATS—VENTILATES This Highboy Unit hugs the wall, using little space — delivers makeup air from the outside thru filtered intake. Note fan bearing bowl on left for handy external lubrication.

LOW HEADROOM? Compact wall-mounted "Buffalo" Units deliver plenty of heat in cramped machinery areas. The secret — non-freeze coils of high heating surface, efficient "Buffalo" Fans to distribute the heat where you need it.

NO FLOOR SPACE? A "Buffalo" Lowboy mounted overhead is the answer. Exclusive "Buffalo" swivel outlets aim air accurately. Unit has filters, face and by-pass dampers and mixing box for fresh and return air.

IT PAYS TO BUY QUALITY!

For no-complaint heating and ventilation, season after season, there is no substitute for the engineering and manufacturing Quality that have always gone into "Buffalo" Unit Heaters. For contractors, this means "no-callback" customer satisfaction; for users, reliable, low-cost comfort and better working conditions. Write today for Bulletin 3704A for details. Capacities up to 35,000 cfm.

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BUFFALO, NEW YORK

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VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

Call MILTON for dependable BEAMS

Light Metal featuring continuous welded construction

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FORGED HEADS
RIGID BARRELS

Forged heat-treated aluminum alloy heads and extra heavy wall barrels designed to withstand extreme pressures of monofilament; fine denier; low-turn nylon; and rubber yarns. 13¾" and 21" diameter heads.

SECTION BEAMS

Adaptable to all makes of warpers. Cast aluminum alloy heads and extruded aluminum barrels cannot shrink, swell, splinter or distort.

STEEL BARREL
WARP BEAMS
for BROAD, NARROW FABRIC, RIBBON, VELVET AND CARPET LOOMS

BROADLOOM BEAMS

for C & K and Draper Looms

Shown above is Milton's stud construction (also made with cast iron hubs).

RIBBON LOOM BEAMS

Adjustable head with fixed shaft, or fixed head with removable shaft.

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What the TEXTILE MILLS are doing

ments. With the closing of the Thrift Mill, The Kendall Cotton Mills research department and the cotton acceptance department will be moved to other locations. The latter will be moved to Newberry, S. C., where it will be housed with the company's cotton procurement office.

May Hosiery Mills, Nashville, Tenn., has completed merger with **Vaughan Knitting Co., Inc.,** Wytheville, Va. Commenting on the action, a mill official said that for the present Vaughan's four plants and the headquarters at Wytheville will continue operation where they are.

Oakdale Hosiery Mills, Mount Airy, N. C., has purchased **Carter Hosiery Mills, Inc.,** also of Mount Airy. Operation of the mill at the same rate of production and under the same name is planned.

In the Pauline Plant (Kings Mountain, N. C.) of **Neisler Mills Div. of Massachusetts Mohair Plush Co.,** 60 looms for the manufacture of pile fabrics will be installed. The mill is now being stripped to make way for the equipment, which will be of double-shuttle type for the weaving of pile and backing in one operation. Of the 130 looms being removed, 70 will be installed in the Margrace plant; the remainder will be junked.

Moving to a new location with 10,000 sq ft more floor space, **Progressive Knitting Mills, of Pa., Inc.,** will be established at 19th St. and Allegheny Ave., Philadelphia, Pa. Some new machinery will be added at the new location, which comprises 26,000 sq ft of space on one floor.

Reeves Bros., Inc., and Piedmont Cotton Co., Spartanburg, S. C., have merged. The latter is a textile sales firm.

At the Startex (S.C.) Division of **Spartan Mills,** construction of a three story, 87,000 sq ft warehouse adjacent to the present warehouse of the bleachery and sewing room is planned.

J. P. Stevens & Co., Inc., has added a new sheet, "Stevens Wonder Tricot," to the Stevens Utica-Mohawk line. The new sheet (100% nylon) needs no ironing, dries in minutes, will not run or ravel, and is

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We are using our advertising space this month to thank our many friends for their wonderful acceptance of G C Specialized lubricants for the TEXTILE INDUSTRY

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What the TEXTILE MILLS are doing

given the Sanitized finish to keep it fresh and odor resistant. The sheets are packaged in a polyethylene bag designed as a point-of-sale display and a dust-free container for storage.

On May 15, 1956, the corduroy department of **Union Bleachery,** Greenville, S. C., completed eleven years of operation without a lost time accident.

Recently completed at the Campbellsville, Ky., plant of **Union Underwear Co.** was a 45,000 sq ft addition in which more knitting, bleaching, and drying equipment has been installed to increase production. It is expected that all of the yarn produced at the company's recently acquired Profile Cotton Mills in Jacksonville, Ala., will be utilized by the enlarged Campbellsville knitting mill.

Tufted robes and chenille products are to be produced in a Cleveland, Tenn., branch plant of the **Richmond Manufacturing Co.,** Dalton, Ga. Plans call for employment of about 75 persons initially and a requirement of 150 employees eventually. Manager of the plant is Martin S. Richmond.

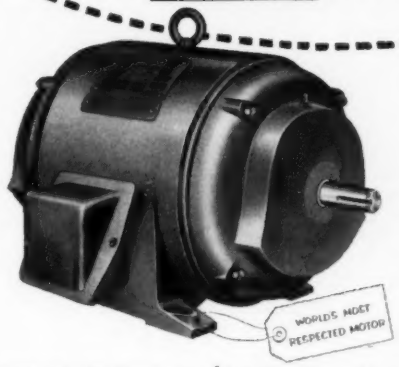
Kosciusko, Miss., has been selected by **Wayne Knitting Mills** of Fort Wayne, Ind., as the site for a new hosiery mill. Plans call for completion by November 1 of a 20,000 sq ft building to house the operation which will require about 160 operatives.

A new plant which will cost about $250,000 is to be constructed in Shelby, N. C., by the **J. W. Wood Co.** of Stoughton, Mass., manufacturer of elastic webbing for specialty wear. Employment of from 50 to 100 persons for this operation is contemplated.

Early - American - type bedspreads will be made on Jacquard looms in a new 18,000 sq ft plant to be established in Cartersville, Ga., by **Fred and Ira Rosen** of Dalton, Ga.

J. W. Landenberger & Co., Philadelphia, Pa., has introduced "Handlets," a mitt designed for wear while washing or donning hosiery to prevent snagging or other damage frequently caused by rough skin. Made of knitted Tycora yarn, the mitts are

The BROOK is the motor you can INSTALL AND FORGET!!



Because it is no ordinary motor—the stator, rotor, windings, electrical varnish used and the bearings are designed and selected to give long, trouble-free service under the toughest conditions. Yet, BROOK MOTORS cost no more than ordinary motors—usually they cost less. No wonder so many mills, gins, quarries, factories, petroleum producers and others using BROOK MOTORS praise them so highly. Send for construction feature Bulletin 827.

Open Drip Proof (shown), Totally Enclosed Fan Cooled, Totally Enclosed Non-Ventilated, NEMA "C" and "D" Flange, Extended Shaft Pump Motors, Special Motors, Squirrel Cage or Slip Ring, stocked in a wide range of sizes.

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Brook Motors are available from warehouse at Chicago, Dallas, Jersey City, Los Angeles, Memphis, St. Paul, Salt Lake City, San Francisco, Savannah, Seattle, Tampa, and other major distributing points.

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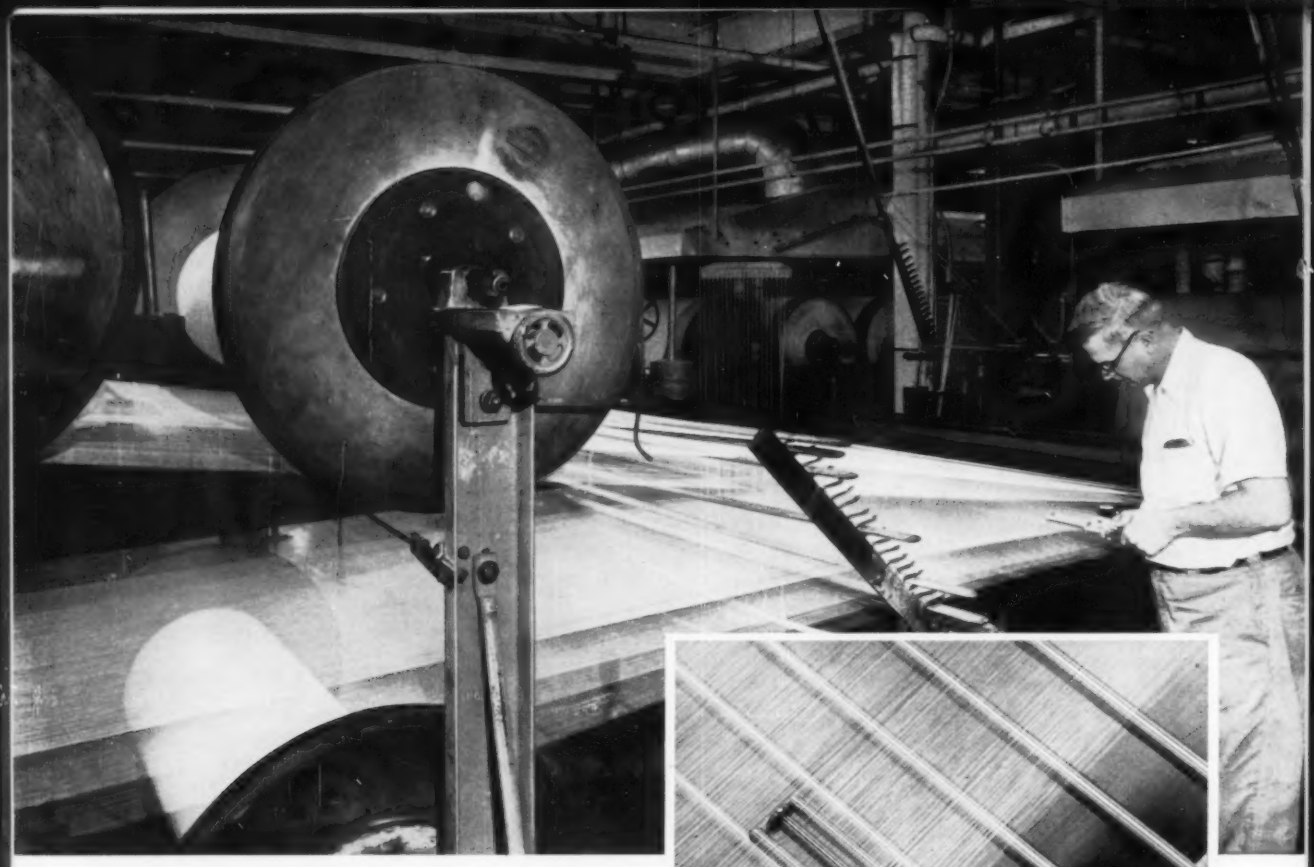

NEW KIDDE SLASHER TENSOMETER ends uneven yarn sheet tension in cotton system slashing

The new KIDDE Slasher Tensometer prevents a principal cause of streaky fabric in weaving mills that slash their yarn on the cotton system. No matter how many creel beams you use to make up your warp, you can now be sure that the tension in all yarn sheets is the same. With the KIDDE Slasher Tensometer it is easy to compare the tensions in the yarn sheets making up the sley and adjust the beam let-offs to even out any differences. It eliminates the all too fallible human element in estimating tensions from different beams in the same set.

Developed in cooperation with the Textile Research Laboratory of American Viscose Corporation, the KIDDE Slasher Tensometer will provide quality insurance in any slasher room. For prices and complete information, write today to: Dept. STB2.

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The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

of one size with separated thumb and forefinger to permit easy handling of the hosiery by the wearer.

Rome (Ga.) Hosiery Mills have ended operations, and the equipment, building, and property have been offered for sale.

Fontana Mills, a newly formed subsidiary of James Lees and Sons Co., Bridgeport, Pa., has purchased a plant site at Robbinsville, N. C. The plant, to be erected in the near future, will be a Wilton-velvet carpet weaving plant.

The Supervisors Club of the Arlington plant of **Textiles-Incorporated,** Gastonia, N. C., recently held its first banquet.

A former subsidiary of Respro Division of General Tire & Rubber Co., **United Lace and Braid Co.,** Cranston, R. I., has been taken over by a group headed by Raymond S. Newell. The plant is to be moved from Cranston to 166 Valley St., Providence, R. I., and manufacture of shoe laces, braids, and other nonelastic narrow fabrics will be continued.

A yarn sales division of **S. Stroock & Co.,** Newberg, N. Y., will manufacture yarns at Newberg for sale to the knitting trades.

The Edward Krock Industries of Worcester, Mass., have acquired **Vassalboro (Maine) Mills** from Amerotron Corp.

Spontaneous combustion was given as the cause of a fire in a six-story warehouse at the **Eagle & Phenix Division of Fairforest Co.,** Columbus, Ga. "Millions of yards" of finished cotton goods were damaged.

July 16 of this year was proclaimed "Denim Day" by **Lane Cotton Mills Co.,** New Orleans, La., in celebration of 100 years of spinning, dyeing, weaving, and finishing denim cloth. The mill which has grown from a $20,000 building in 1856 to a $6-million-dollar plant, employs 1400 people and consumes about 1,000 bales of cotton each week. M. Lowenstein & Sons, Inc., of New York is the parent company. J. G. Shedd is vice-president and general manager.

Are You Getting a Fair Day's Work for a Fair Day's Pay?

As Production Engineers we specialize in the utilization of

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Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

"I am pleased to advise you that I consider this firm to be outstanding in the field of labor utilization engineering, and have no hesitancy in recommending them for any work of an industrial engineering nature which they propose to undertake."
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Write for a free copy of "Labor and Management Benefit by Industrial Engineering Principles," and our booklet "A Fair Day's Pay and in return A Fair Day's Work".

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RESEARCH and SERVICE is the formula that makes NORTH size the best buy for your mill.

High production and quality weaving are made possible by proper size, correct application and alert service.

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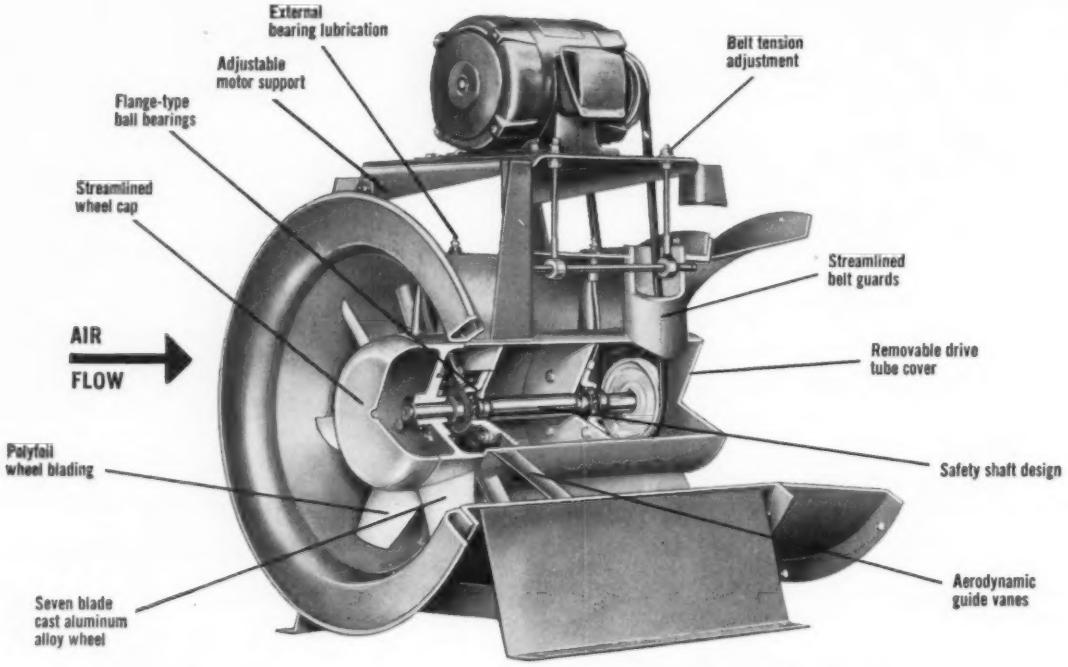
The Nation's largest manufacturer of Sizing Compounds, Gums, Waxes, and other kindred products for all warp yarns.

NEW Improved Westinghouse Axial Flow Fans

for Industrial air, fume, vapor handling jobs!



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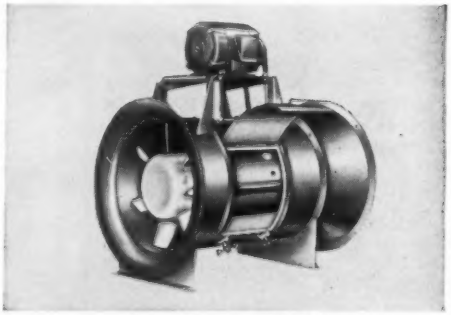
COMPLETE NEW LINE

With: volumes from 1,700 to 100,000 CFM—static pressures up to 3¼"—14 sizes, Vaneaxial or Tube Axial, direct-connected or V-belt driven, with wheel diameters from 15" to 72".

- **Space Saving** . . . compact Axial Flow design permits installation directly into duct work.
- **Improved performance** . . . non-overloading horsepower feature permits use of smaller motors.
- **Least maintenance** . . . rugged practical construction insures continuous trouble-free operation.

For complete application service, call your nearest Sturtevant Sales Engineer, or write Westinghouse Electric Corporation, Sturtevant Division, Dept. 7J, Hyde Park, Boston 36, Mass.



Spray booth Vaneaxial Fan specially designed to provide easy access required for paint spray exhaust!

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COVER PRESIDENTIAL CAMPAIGNS ON CBS TELEVISION AND RADIO

SUPPLIERS News

WHAT THEY ARE DOING

Jesse W. Stribling, who opened the Atlanta, Ga., office of **Universal Winding Co.** in 1925 and has been in charge of it since then with the exception of a brief period during the

Mr. Stribling

war, is now sales manager of Universal's domestic textile machinery division, according to Robert S. Pennock, vice-president in charge of domestic sales for the company. With headquarters at Universal's main office in Cranston, R.I., Mr. Stribling is responsible for activities of the division in both the United States and Canada. EDITOR'S NOTE: Mr. Stribling has for many years been a contributor to the editorial columns of TEXTILE INDUSTRIES, not only as an author of technical articles on twisting and winding, but also as editor. In January, 1944, he was named editor of this magazine (then called "Cotton") and served in that capacity until March, 1946, when he returned to Universal. Many TI readers will remember his "Winding Machines—Principles and Practices" (a series consisting of 24 articles, the first of which appeared in August, 1947) and "Work Load Calculations for Winding Machines" (August, 1952, pp.135-150).

At **The Chemstrand Corporation,** S. Jack Davis has been promoted from coordinator of activities in textile research to the position of assistant director of research in charge of the textile processing division. * * * James R. Everette, Jr., has been assigned to the New England district sales office at Dedham, Mass., and he will service accounts for both Acrilan fiber and nylon. * * * Chemstrand, Limited, will build a plant at Coleraine in Northern Ireland for the manufacture of Acrilan fiber. Construction is expected to be completed not later than January, 1959.

At **Dodge Mfg. Corp.,** Carl W Peterson, previously vice-president and works manager, was named executive vice-president; Earl Wedlake was elected vice-president in charge of production and purchasing; and Karl D. Jahnke was promoted to the offices of secretary and treasurer to succeed Temple Williams who has retired.

Newly appointed starch sales representative for the southern division of **Clinton Corn Processing Company** is Charles C. Calhoun, who will contact textile mills in North and South Carolina.

New technical representative of **Mona Industries, Inc.,** is Ray E. Smith who is handling the demonstration work and technical service in conjunction with Mona's expanding line of textile chemicals.

Mr. Smith
Mona

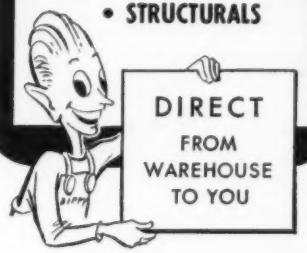
Mr. Dunham
Shellmar-Betner

Metallic yarns are now being produced and marketed by the **Shellmar-Betner Division of Continental Can Co.** Serving as metallic yarn sales specialist for Shellmar-Betner is Edgar W. Dunham, Jr., who is headquartered at the company's offices at 100 E. 42nd St., New York 17, N. Y

Personnel changes in the coatings department of the **Goodyear Tire and Rubber Co.** chemical division include the promotion of John W. Warner to manager of the coatings department, Gordon H. Campbell has been made assistant manager. Charles S. Baker III replaces Mr. Campbell as special

STEEL FOR THE TEXTILE FIELD

- STAINLESS STEELS
- CARBON STEEL BARS AND SHAPES
- PLATES AND SHEETS
- COLD-FINISHED SHAFTING
- STRUCTURALS



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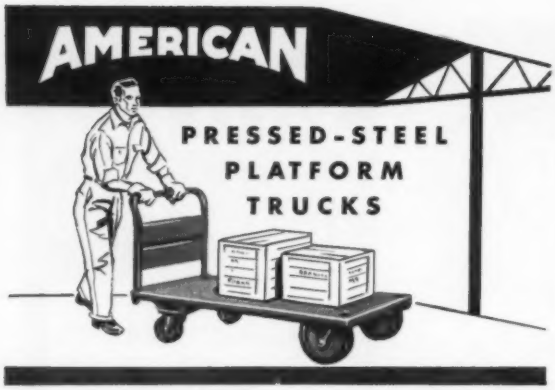

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- AND they're easy to roll, easy to push, to turn. American Steelite® Wheels have oversize ball-bearings with lubricant sealed-in at the factory . . . no frozen wheels.
- COME in 25 combinations of size and type for the greatest versatility, for maximum range of use.
- PROVIDE really low-cost transportation with minimum maintenance, long life.
- STOCKED and sold by leading distributors in over 100 cities from coast to coast.

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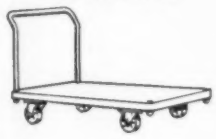

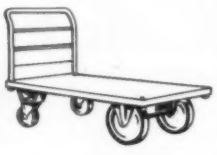

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Just about every important cleaning problem a textile mill runs up against is discussed in the Oakite booklet, "Textile Mill Cleaning Guide."

Like the sections on job-tested cleaning procedures for overhaul work ... on cleaning of machinery ... plant maintenance cleaning. There's also a section on cleaning of air-conditioning and humidifying equipment.

Chances are you'll find the answer to your special cleaning problems ready-to-hand in this helpful informative booklet. Write for your free copy to Oakite Products, Inc., 52D Rector Street, New York 6, N. Y.

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Technical Service Representatives in Principal Cities of U. S. and Canada

SUPPLIERS News — WHAT THEY ARE DOING

representative in the Charlotte, N. C., sales territory. * * * J. L. Krouse has been assigned to the special products department of the industrial products division to handle sales of the company's electrostatic air filters. He replaces E. F. Poling who has left Goodyear.

The Hart Products Corp. has announced the opening of their modern 4000 sq ft research and development laboratories in Jersey City, N. J., replacing the one destroyed by fire in January, 1955.

Henry F. Welfare has been appointed special representative in the textile department of **International Business Machines Corp.** Formerly a sales representative for the company in Winston-Salem, N. C., Mr. Welfare now makes his headquarters in Charlotte, N. C., where he coordinates sales activities and the planning of applications of IBM equipment to meet the needs of companies in the textile field.

Jack P. Greer, **Hyster Co.,** has been promoted to the position of district manager of the mid-central district, replacing Walt St. Clair who was recently promoted to assistant sales manager of the eastern division. Mr. Greer's territory includes eastern Michigan, western Ohio, all of Kentucky, eastern and central Tennessee, and most of Indiana.

George R. McGrath has been named sales manager of **Hartford Rayon Co.** He was formerly northern sales representative for the firm.

The H. F. Livermore Corp. expects to occupy a new warehouse, southern sales offices, and pilot weave room on the highway between Greenville and Spartanburg, S. C., by the time of the 19th Southern Textile Exposition in Greenville in October. Ernest W. Fanning, southern sales manager, will maintain his office in the new building and will head the southern operations.

Steel Heddle Manufacturing Co. has announced the promotion of G. David McGill to the newly-created post of southern product manager, with headquarters in the Southern Shuttles Division at Paris, near Greenville, S. C. Due to the resignation of Ralph L. Parker, Richard B. Stevens has been promoted to the position of acting district manager in the Greensboro, N. C., office. Hugh I. Cash has been transferred to the Greensboro office from Greenville, S. C. Everette M. Lail formerly in the Southern Shuttle Division's order department, has been appointed sales engineer to cover the territory formerly handled by Mr. Cash.

National Cylinder Gas Co. announces that Dr. Edward Abrams has joined the staff of its newly formed chemical preservative department to

Dr. Abrams

head up the research and other scientific aspects of the department's activities. He was formerly head of the textile section at Southern Research Institute, Birmingham, Ala.

To the existing Philadelphia, Pa., plant of **Harry Miller Corp.** has been added a total of 33,200 sq ft of space. Other improvements to the physical plant include the air conditioning of offices and laboratories, a new shipping dock, loading and unloading platform, outside covered storage area, and a new parking lot for employees and visitors.

New director of research for the **A. E. Staley Manufacturing Co.** is Dr. James A. Bralley, formerly associated with Rohm & Haas Co.

Howard L. Jenkins, pioneer in the use of Diastafor desizing agent by the textile industry and manager of the Diastafor department of **Standard Brands, Inc.,** has retired after 30 years of service. W. Douglas Smith, formerly assistant to Mr. Jenkins, has been named sales manager of the department. * * * The firm has moved its headquarters in New York City to the Standard Brands Building on Madison Avenue at 59th St.

Allied Chemical and Dye Corp. has begun construction of a new textile fiber application research unit near the Chesterfield Plant of its **National Aniline Division** at Hopewell, Va. The

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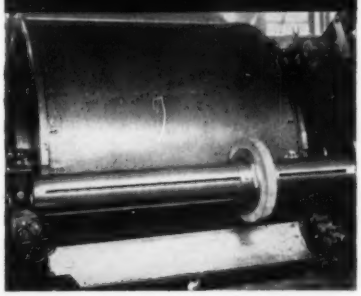

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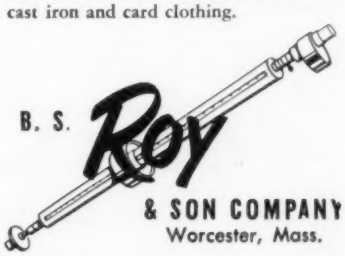

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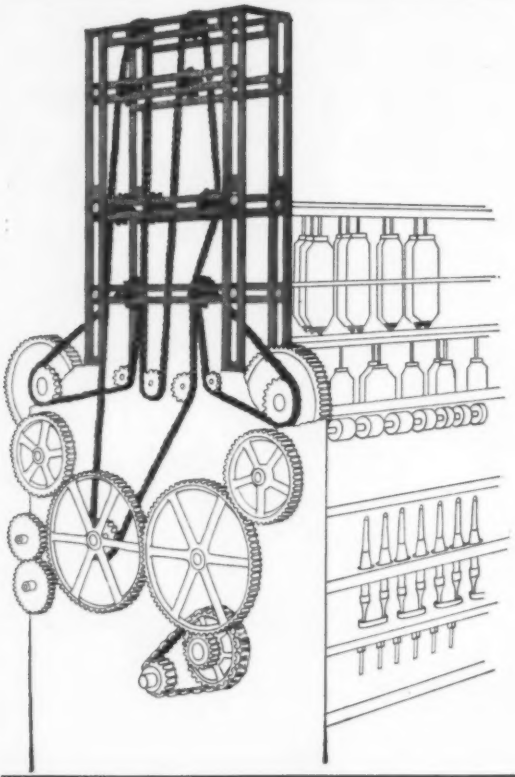

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laboratory, which will be a modern textile mill in miniature, has been designed to provide immediate mill evaluations of Caprolan "deep-dye" nylon and Caprolan "tensile-tough" nylon as these products are delivered from the production line. To be equipped with modern textile machinery for spinning, knitting, tufting, and weaving, the laboratory is expected to reach completion late this year.

Wildman Manufacturing Co. has announced that Kenneth Howie, president and general manager, has retired, having been associated with the company for 39 years.

Filling the post of sales manager at **Packless Metal Hose, Inc.,** is Murry B. Johnson, formerly regional sales manager for Warner-Patterson.

Textile fiber salesmen of **E. I. du Pont de Nemours & Co., Inc.,** who formerly specialized in the sale of one fiber, have assumed responsibility for selling all of the company's five fibers. The change in policy was designed to eliminate duplication of salesmen's calls and provide improved service to customers.

At the recent eleventh annual convention of the Tufted Textile Manufacturers Association, the associate group elected as its president Lewis Card of **Cobble Bros. Machinery Co.,** Chattanooga, Tenn., succeeding Ralph Ewing, Sr., of Candlewick Yarn Co., Dalton, Ga. Other officers elected were: vice-president, Miss Kathleen Jacquith, **Super Tufter Machinery Co.,** Ft. Oglethorpe, Ga.; and secretary and treasurer, Frank Strain, manufacturers' agent for **Marion Mfg. Co.,** and **Rocky Creek Mills,** Marion, N. C.

Norman A. Price has been promoted from vice-president in charge of sales to executive vice-president of **The Colson Corporation.**

C. F. Boyer has been appointed special assistant to W. R. Staples, manager of sales for the alloy tube division of **The Carpenter Steel Co.** He will continue to operate from his headquarters in Atlanta, Ga., where he was formerly southeastern territory sales manager.

Donald E. Pierce, formerly assistant manager of the equipment sales department of **Brush Electronics Company,** a division of Clevite Corp., has been promoted to manager of the department.

George C. Graves, III, succeeds his father, the late George C. Graves, Jr., as sales representative for **Alfred Hofmann Needle Works, Inc.,** in N. C., S. C., and Ga. For the convenience of his customers, a stock room is maintained at Mr. Graves' headquarters at 1224 10th St., N.E., Hickory, N. C.

Mr. Graves
Alfred Hofmann

Mr. Nuttall
Stein, Hall

Norman Nuttall has rejoined **Stein, Hall & Co., Inc.,** as manager of its Charlotte, N. C., sales branch, replacing Frank Perry, recently appointed manager of the company's domestic starch department.

John L. Stickley, of Charlotte, N. C., president of the **John L. Stickley Co.,** has been elected international president of Lions International service club organization, for a one-year term.

SUPPLIERS News
WHAT THEY ARE DOING

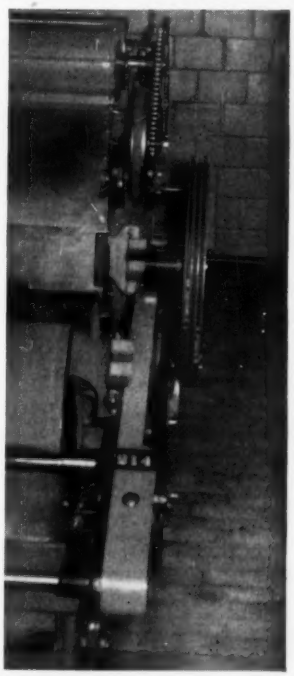
At **Rodney Hunt Machine Co.,** Earl F. Harris has stepped up from executive vice-president to president of the company. Carl C. Harris, president since 1938, will continue to serve as chairman of the board.

Dr. Lloyd E. Parks, formerly vice-president and general manager of the Bee Chemical Co. in Chicago, has been appointed representative for **Soluol Chemical Co., Inc.,** in the southeastern states.

Robert Gair Co., Inc., has opened a new folding carton sales office in Dallas, Texas. James W. Howry was transferred from the Kansas City office to take charge of the new Dallas sales office.

In commemoration of 125 years of service to the textile industry, **Curtis & Marble Machine Co.** has issued an

Find the motor driving this card?



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No, you can't see the motor because it's a 1½ hp., 900 RPM Fairbanks-Morse Axial Air Gap Textile Motor that fits completely within the over-all dimensions of the card.

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Mr. Clanton
Pneumafil

Mr. Williams
Pneumafil

Mr. Claghorn
Fletcher Works

Mr. Baldridge
Fletcher Works

attractively illustrated 34-page booklet printed in two colors, giving a word and picture history of the company's development, and dedicated to the memories of the many generations of Curtis & Marble people who have served the industry.

Celanese Corporation of America has announced that the Chilean Government has approved the application of its foreign subsidiary, Celatino, S. A., for establishment of a multi-million dollar acetate yarn manufacturing plant near Valparaiso. The plant, first venture of its kind in Chile, will have an initial capacity of 3,000,000 pounds annually and according to plans, will be in operation within the next 18 months. It will be operated by a newly-organized Celanese affiliate company, Celanese Chilena, S. A. * * * Laurence T. Gerrity, former N. Y. district textile sales manager, has been named textile sales development manager, with headquarters in Charlotte, N. C. Mr Gerrity succeeds A. Carl Martin, Jr., now staple products sales manager. Peter H. Conze, formerly with Midland Textiles, Inc., has been appointed textile district sales manager in New York to succeed Mr. Gerrity. * * * Midwestern sales headquarters for the firm's industrial textile products have been established at 22 West Madison Street, Chicago, Ill with Arthur E. Berngen of Park Ridge, Ill., in charge of a 12-state sales area.

At **Pneumafil Corp.**, C. Perry Clanton, Jr., has assumed the duties of sales manager of textile products. Replacing Mr. Clanton as sales engineer for the South Carolina territory is Edward J. Williams who steps up from a post as engineering draftsman.

Frederic Claghorn has resigned as vice-president of Pennsylvania Ribbon Manufacturers to join the field sales engineering force of **The Fletcher Works.** * * * T. Bayard Baldridge, Jr., formerly sales engineer, has been assigned to direct sales in northern Pa., N. J., N. Y., New England, and Canada.

Malcolm V. Macfarlan has been promoted to the newly-created position of field sales manager at **American Viscose Corp.** He is in charge of the corporation's acetate and rayon branch sales offices and continues as head of the sales council out of the New York office. * * * Elevated to Mr. Macfarlan's former position, manager of rayon filament sales, is Norman A. Cocke, Jr., who in turn is succeeded by J. Reid Durbin, assistant manager and head of the staple and tow division at Charlotte.

William W. Kinzer, Albany, N. Y., salesman for the industrial division of **Armstrong Cork Co.** for the past 11 years, has been named sales training and promotion supervisor for the division. * * * Promoted to assistant district manager of the industrial division office in Cincinnati, Ohio, is Albert C. Littlejohn, formerly a salesman out of the Greenville, S. C., office.

A new building, adjacent to the present manufacturing plant of **Bijur Lubricating Corp.** in Bennington, Vt., which will increase space by more than 50%, is expected to reach completion around October 1.

Beetle-lite trucks are practically indestructible. Strong, continuous top and bottom steel reinforcements are completely enclosed in a heavy seamless Fiberglas body. Color is molded in, thus eliminating all need of painting. Made in nine sizes, with or without drain bottoms. Beetle-lite also furnishes doff and tote boxes, vats, crocks, and tubs.

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SUPPLIERS News
WHAT THEY ARE DOING

Charles W. White has joined **Sonoco Products Co.** as director of sales, with headquarters at the main office in Hartsville, S. C. Mr. White was formerly associated with Talon, Inc., in sales and sales management. At Sonoco, he replaces the late W. H. Miller.

The Fairbanks Company announces the appointment of John E. (Bill) Bates to the position of New England branch manager. He will direct the sales of the firm's casters, hand trucks, wheels, bronze and iron body valves and dart unions, with headquarters at the Boston, Mass., office and warehouse.

Atlas Powder Co. has appointed Dixon C. Van Winkle to the newly-created post of field sales manager of its chemicals division, with headquarters in the Wilmington, Del., general offices. Succeeding him as manager of the firm's New York chemicals sales office is Henry C. S. Swab. Edward J. Costello, who has been handling west coast technical correspondence in the Wilmington general offices, replaces Mr. Swab as technical representative in the San Francisco chemicals sales office.

The U. S. Patent Office has granted **Hans C. Bick, Inc.,** Patent No. 2,746,-941 covering the application of a chemical process, "nylonized," by which a nylon finish is applied to nylon, acetate, and other woven or knit fabrics.

William H. Kendall has been assigned as a sales representative in the Charlotte district of the **Allis-Chalmers Mfg. Co.,** industries group.

Gifts to educational institutions by the **Dow Chemical Co.** will total $320,000 in the school year beginning in the fall of 1956. The new program adds 11 fellowships and two scholarships to the present Dow schedule of grants to education.

E. Kent Swift, chairman of the board of **Whitin Machine Works,** was recently awarded an honorary degree, Doctor of Humane Letters, by Williams College in Williamstown, Mass. * * * Whitin Machine Works is celebrating its 125th anniversary of service to the textile industry. * * * Fred Tattersall has been promoted from salesman to the worsted industry to manager of the American System Worsted & Sales Division, succeeding J. H. Bolton, Jr., who has been elected vice-president liaison, sales.

Alvey Conveyor Manufacturing Co. has named L. F. Shattuck as the company's new representative for Atlanta, Ga., with offices at 1299 W. Peachtree St., N. W.

The Portland Company has appointed W. J. Westaway Co., Ltd., Hamilton, Ont., as its agent in Canada for the Chapman static eliminator.

Southeast warehouse facilities for the organic chemicals products of the **Dewey and Almy Chemical Co.,** division of W. R. Grace & Co., have been set up in Atlanta, Georgia. Arrangements with Bonded Service Warehouse, Inc., at 225 Moore St., S. E., to stock the line of Darex polyvinyl acetate polymers and Everflex copolymers, make 24-hour emergency deliveries possible.

The industrial division of **Texize Chemicals, Inc.,** announces the addition to its staff of Ralph L. Parker, formerly associated with Steel Hed-

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dle Mfg. Co., as representative for textile mills in North Carolina and part of Virginia. Mr. Parker's headquarters are in Greensboro, N. C.

The Springfield, Mass., plant of **Titeflex, Inc.,** was selected for the purpose of consolidating facilities, a $1,500,000 operation, in order to take full advantage of the economies and efficiency derived from the operation of a single plant. The move has been completed, and the plant now comprises over approximately 300,000 sq ft, having been enlarged by 40,000 sq ft during the consolidation.

Tubular Textile Machinery Corp. has acquired exclusive knitting industry rights to the "compacting process" (developed by Fabric Research Laboratories) for the preshrinking of knitted fabric by mechanical means without regard to construction or yarn content. Plans for marketing the process are dormant, pending completion of machine design work.

The appointment of Herbert W. Patrick as head of the **Uster Corporation** testing equipment service department has been announced.

Recently promoted from sales representative to assistant sales manager for the Votator Division of **The Girdler Co.,** is Boyd B. Mahon, Jr. Also elevated from a member of the technical sales department to manager of technical sales is Harold E. Huber.

Appointment of Harvey P. Balsom, formerly located in the company's Cleveland sales office, as district sales manager in North Uxbridge, Mass., for the textile machinery division of the **Warner & Swasey Co.** has been made known. Mr. Balsom's new responsibilities will cover the states of Me., N. H., Vt., Mass., Conn., R. I., and the Province of Quebec plus parts of New York State and Ontario.

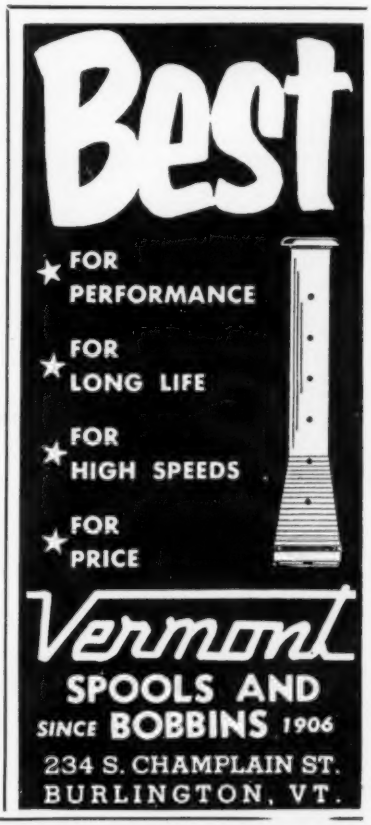
West End Chemical Company and **Stauffer Chemical Company** announce that their boards of directors have met and approved a plan of merger of West End into Stauffer. West End Chemical Co. produces borax, soda ash, salt cake, and lime at its plant at Searles Lake, Calif. West End will continue to operate as an autonomous division of Stauffer under the designation of "West End Chemical Company Division of Stauffer Chemical Co."

Crompton & Knowles of Canada, Limited, announces the election of W. C. Howe as director of the company and the appointment of Allan F. Ballantyne as secretary. Mr. Howe, as northern sales manager for the parent company and as director of the Canadian interests, will have general supervision of the sale of C & K looms to the Canadian primary textile industry. W. O. Fisher, formerly managing director and secretary has been recalled to the parent firm where he will work directly with J. F. Molloy, export sales and assistant general sales manager.

Frank J. Kelly, formerly executive vice-president of Amwool Financial Corporation, has joined **Crompton-Richmond Co., Inc.,** factors, as vice-president and credit manager.

Fred E. Rau has been appointed as manager, hoisting equipment sales, for the Yale materials handling division of **The Yale & Towne Mfg. Co.** Mr. Rau succeeds Carl O. Hedner who has been named assistant general sales manager of the Yale materials handling division. * * * Robert L. Brown, Jr., formerly assistant sales manager of gas, diesel and LP-Gas powered industrial lift trucks, has been named electric truck sales manager. * * * William S. Woodward has been promoted to the position of district sales manager, hoisting equipment, for the New York State territory with offices in the Kemper Building, Syracuse.

SUPPLIERS News
WHAT THEY ARE DOING



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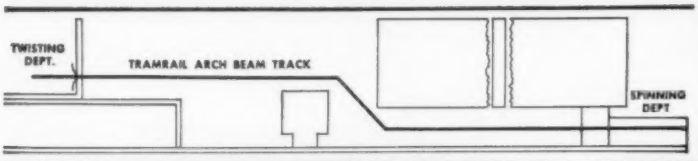

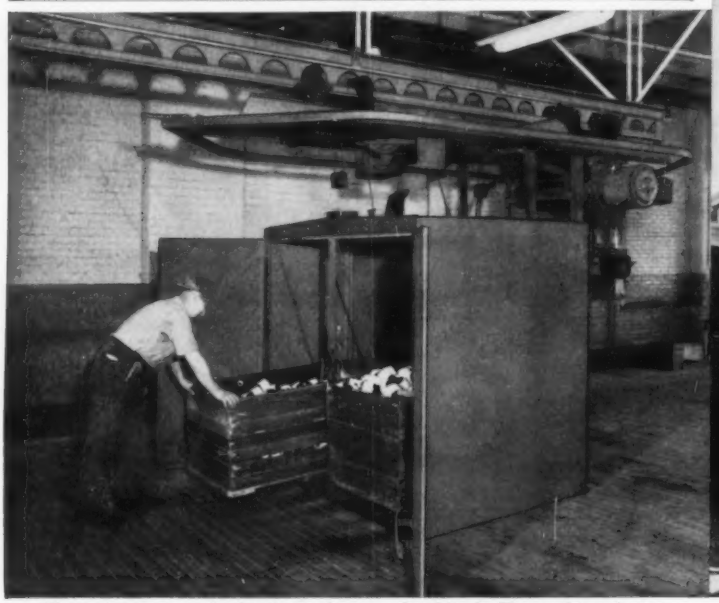

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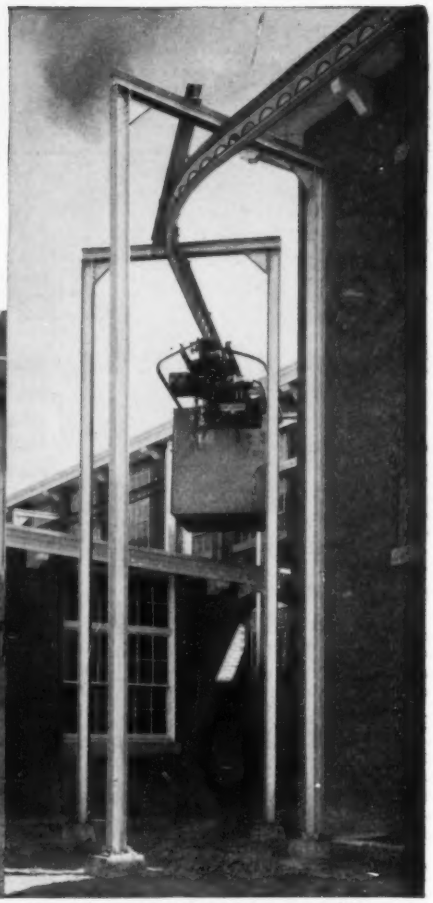

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